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NBS SPECIAL PUBLICATION

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STANDARD REFERENCE MATERIALS: COMPILATION OF ELEMENTAL CONCENTRATION DATA FOR NBS CLINICAL, BIOLOGICAL, GEOLOGICAL, AND ENVIRONMENTAL STANDARD REFERENCE MATERIALS.

E. S. GLADNEY, B. T. O'MALLEY, I. ROELANDTS, AND T. E. GILLS.

Research Information Center
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Gaithersburg, Maryland 20899

NBS SPECIAL PUBLICATION 260-111

U.S. DEPARTMENT OF COMMERCE/National Bureau of Standards

Standard Reference Materials: Compilation of Elemental Concentration Data for NBS Clinical, Biological, Geological, and Environmental Standard Reference Materials

E. S. Gladney, B. T. O'Malley, I. Roelandts, and T. E. Gills

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[2]Some divisions within the center are located at Boulder, CO 80303.
[3]Located at Boulder, CO, with some elements at Gaithersburg, MD

Standard Reference Materials:

Compilation of Elemental Concentration Data for NBS Clinical, Biological, Geological, and Environmental Standard Reference Materials

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PREFACE

Standard Reference Materials (SRMs) as defined by the National Bureau of Standards are "well-characterized materials, produced in quantity, that calibrate a measurement system to assure compatability of measurement in the Nation." SRMs are widely used as primary standards in many diverse fields of science, industry and technology, both within the United States and throughout the world. For many of the Nation's scientists and technologists it is of more than passing interest to know the measurements obtained and methods used by the analytical community when analyzing SRMs. An NBS series of papers, of which this publication is a member, is called the "NBS Special Publication - 260 Series" is reserved for this purpose.

This 260 Series is dedicated to the dissemination of elemental concentration data for NBS clinical, biological, geological, and environmental SRMs. More information will be found in this 260 than is generally found in NBS Certificates of Analysis. This 260 enables the user of these SRMs to assess the validity of data not available in the certificate of analysis. We hope that this 260 will provide sufficient additional information so that new application of these SRMs may be sought and found.

Inquires concerning the technical content of this compilation should be directed to the authors. Other questions concerned with the availability, delivery, or price of specific SRMs should be addressed to:

Office of Standard Reference Materials
National Bureau of Standards
Gaithersburg, MD 20899

Stanley D. Rasberry, Chief
Office of Standard Reference Materials

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Compilation of Elemental Concentration Data for NBS Clinical, Biological, Geological, and Environmental Standard Reference Materials

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Concentration data on as many as 92 constituents in 166 NBS Standard Reference Materials have been collected from over 1500 journal articles and technical reports. These data are summarized in consensus (mean) values with uncertainties expressed as ± one standard deviation and compared with all available certification data from NBS. Data are presented on the analytical procedures employed and all raw data are given in the tables. This compilation is a successor to NBS Special Publication 260-88.

Key words: Analytical methods, biological, certified, clinical, compilation, consensus values, environmental, geological, informational values, literature values, mean values, Standard Reference Materials, SRM.

DISCLAIMER

Certain commercial equipment, instruments, or materials are identified in this report to adequately specify the procedure used for data compilation. Such identification does not imply recommendation or endorsement by the National Bureau of Standards or the Department of Energy, nor does it imply that the materials or equipment identified are necessarily the best available for the purpose.

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1. Introduction

This compilation is a revised, updated, and expanded version of the 1982 edition published as NBS Special Publication 260-88 in 1984 (1). It is produced in a "living manual" format with the intent that individual tables will be revised whenever sufficient new data have appeared in the literature. These revisions will be provided to all known holders of the manual.

The National Bureau of Standards (NBS) has produced nearly 200 Standard Reference Materials (SRM's) for use in clinical, biological, geological,and environmental analytical chemistry. The basic goal of the SRM program is to provide homogeneous and stable materials of a variety of natural matrices, for use in technique development and in analytical quality assurance. The function of SRM's in the latter role has been well-documented in a series of publications by Taylor (2-5). Standard Reference Materials carry the full legal weight and authority of NBS and the U.S. Department of Commerce, as they have been specifically authorized by federal legislation.

The concentrations of as many as 44 constituents have been determined by NBS at one of two confidence levels in each SRM: certified values and non-certified or informational values. The former is the present best estimate of the true concentration of that constituent and is not expected to deviate from that concentration by more than the stated uncertainty. These certified concentrations are determined at NBS or with cooperating laboratories using either a definitive method, two or more independent methods, or reference methods. These methods and other certification criteria have been carefully defined by Uriano and Gravatt (6). Constituent concentrations that are labeled as non-certified or informational are those that NBS has not measured by a defini- tive method, a reference method, or two or more independent methods.

A limitation of many of these SRM's has been the restricted number of constituents that NBS can afford to certify in each material. Numerous investigators outside NBS have published concentration data on constituents in these reference materials. Although brief review articles on NBS SRM's occasionally appear in the literature (7,8), we believe that the user should have access to both the summarized "consensus" value or mean concentration value and all the data on which they were based. This philosophy has been the basis of most of our previous compilation efforts (9-18). Because abstracting services do not have a category "standard reference materials" and this label is rarely used in keyword indices published with articles, the widely scattered data in reports, articles, books, and conference proceedings have been collected only with difficulty.

Data compilations also provide a mechanism for quality assurance checks on agency or compiler's "certified" values. Consistent disagreement between the user community and a certifying agency should encourage the material's producer to carefully re-examine his certification measurements on the element(s) that are in dispute.

There has been continuing controversy among compilers concerning the determination and reporting of final compositional information on reference materials. Flanagan (19) has used "recommended", "average", and "magnitude" to characterize his "estimates" for major components and trace elements in United States Geological Survey materials. Abbey (20,21) has coined the term "usable value" for some of his results and pioneered the "select Laboratories" approach for arriving at overall compositional information. Gladney and Goode (13) elected to report only "mean values" and associated standard deviations without further attempt to assess the varying quality of data determined by different analytical techniques. For the French geostandards (CRPG, ANRT) Roubault, et al. (22) have considered "recommended", "preferred", and "proposed" values depending upon the degree of confidence they felt could be attached to the data. Steele, et al.(23), have reported "recommended" values in the six NIMROC rock samples using some statistical methods. Gladney, et al. (15), chose the term "consensus values" to describe their mean values calculated for USGS rocks after judgemental and statistical eliminations of initial outliers. Lister (24) has examined other "robust" estimators which he believes provide better estimates of true concentations than mean values. Flanagan (25) has used two-way analysis of variance to produce "best estimates of composition" on three recent USGS reference rock samples. Abbey and Rousseau (26) have debated the merits of "Pragmatism vs Rigour" as approaches to the resolution of "disparate" analytical data on four Canadian Iron-Formation reference samples. Lister (27) has used plotting of "S-distribution curves" in an attempt to more closely examine analytical data included in reference materials compilations. Abbey (28) has also recently examined the use of "robust" estimators and Flanagan (29) has recently reviewed the entire spectrum of approaches to composition determination in reference samples.

Approaches to value judgement of data quality or even the advisability of compiling reference materials data can be debated endlessly. The responsibility for the informed end use of these compiled data, regardless of who performed the compilation, lies with individual investigators. Each should read our methodology carefully and critically so that he may decide for himself its limitations. The values in the tables must not be used uncritically. All data behind our mean "consensus values" are presented in the succeeding table so that anyone may recalculate them to reflect his own experience whenever desired.

2. Data Compilation

A listing of the 167 SRM's included in this document is provided in Table I, along with the most recent certification date, the number of data points included in the present compilation, and the relative amount of this data which is new from the previous compilation. All NBS certified and informational values for these SRM's are reported in the individual data tables for ease of comparison. Certified values have uncertainties stated, while informational/uncertified values do not.

The 67 major journals in analytical chemistry, geology, petrology, geochemistry, and environmental science that have been surveyed are shown in Table II. Less comprehensive coverage of books and institutional reports for 1972-1985 has been achieved. More than 1500 different references containing original data on NBS materials have been located. All tables containing summarized data are numbered xxxx-1 while all individual data follow in the table numbered xxxx-2, where xxxx is the NBS SRM number of the material. These latter tables contain the individual data, uncertainties (where provided), references, and the analytical techniques used.

All individual data located were assembled using a VAX 11/730 minicomputer with a VAX-VMS (version 4.2) operating system, an RA-80 121 Mb fixed-media disc drive, three RL-02 10 Mb cartridge disc drives, the Common Data Dictionary (version 3.2) and VAX Datatrieve (version 3.2) software packages (all are registered trademarks of the Digital Equipment Corporation, Manard, Massachusetts). Datatrieve is an interactive data storage and maintenance software system that provides facilities for selective data retrieval, updating, sorting, formatting, and report generation with a minimum of programming overhead. Data were hand-entered into the system via terminal keyboard from copies of the original references. Details of our Datatrieve based data management system are published elsewhere (30).

Upon closing of the database for calculation and publication of the compiled data, all individual records were inspected for typographical errors in material name, element name, units, analytical methods, etc. Those identified were corrected using simple user-generated Datatrieve procedures. Data were then sorted by material, then constituent, and finally units. This collection was inspected (via another user-generated Datatrieve procedure) to identify constituents within a given material that had two or more unit types for the same element. These were then corrected to the same set of units for each conflicting set found using another Datatrieve procedure. Data were resorted by material, constituent, and in ascending order of concentration within each constituent (this can be accomplished in a single operation within Datatrieve). This year, to conserve space, we have chosen to eliminate all reports of limit values (less-than and greater-than) from materials and elements where the data justify confidence in our ability to report a real consensus value. Some subjective criteria, as described by Abbey (21) were used to eliminate data on either end of the reported concentration spectrum that we judged to be clearly beyond the limits of acceptability. Following these eliminations (usually less than 1% of the total data), an initial mean and standard deviation were computed using all remaining data for a given constituent in each SRM. All data points now outside ± two standard deviations from the initial mean were dropped and a revised mean and standard deviation recomputed. These final means and associated standard deviations are reported as our consensus values in Tables 1A-1 to 4355-1 for up to 92 constituents. The number of literature values used to calculate each final value is indicated in the tables. Where sufficient data exist, the median was also determined using all data other than "less-than" values.

The compiled data were again resorted by material, constituent, and groups of analytical methods. An iterative mean and standard deviation (using ± 2s for first round eliminations) were calculated for groups of analytical methods which had sufficient data (i.e., instrumental thermal, instrumental epithermal, radiochemical thermal, radiochemical epithermal, general neutron activation, and delayed neutron methods were all combined into neutron activation; general, wave-length dispersive, and energy dispersive methods into X-ray fluorescence, etc.). These analytical method means and associated standard deviations are also included in the tables.

Mean values in the summary tables (xxxx-1 series) that are based upon less than three data points do not include standard deviations. In a few cases the reported data had such a wide range

as to render the mean value calculation meaningless. Such cases are reported as ranges only (no standard deviation specified). Additionally, there are a few elements where only upper limit data exist, and these are given as only limit values in the tables.

3. Discussion

Our consensus values for major and minor elements in some SRM's can be subjected to a test commonly used by geochemists. "Whole material" summations, similar to geochemists "whole rock" summations, can be calculated from elemental data when oxygen data are available, or the elements can be converted to stoichiometric oxides and then summed. The latter approach is inappropriate for coals, oils, biologicals, and non-silicate rocks where many elements are not present in oxide forms. Because we still have not located any reports of oxygen determination in any of the biological SRM's, the "whole material" summation test cannot yet be applied. There are sufficient oxygen data on three coals and two fly ash materials to attempt the "whole material" summation. It is important that all concentration data used are either on a "dry-weight" basis or that the hydrogen or bound and unbound water be included as individual items in constituents summed. For two silicate rock SRM's where insufficient oxygen data exist, major and minor elements have been converted to stoichiometric oxide forms and summed. In all cases, the uncertainties (where known) are propagated onto the final sum using standard statistical techniques. The results of these calculations are shown below in Table III. Summations of 99 - 101 % are considered a good indication that the major and minor element data are reasonably accurate and internally consistent. The material summations for NBS SRM's 278, 688, 1632A, 1633, 1633A, and 1635 meet this quality criteria, although the propagated uncertainty on the coals (1632A and 1635) are much larger than one would prefer. The summation for NBS SRM 1632 is over 2% lower than the previous compilation, due to a drop in the consensus value for oxygen. Since the two oxygen measurements located differ by a factor of 1.5, the uncertainty on this consensus value is quite high. In the future it is hoped that good oxygen data will be available so that this approach can be applied to a larger number of materials.

The growth of the body of SRM data since the last compilation is summarized in Table I. More details about the changing patterns in reference material measurements, their sources, the analytical techniques used, and the constituents measured were recently described by Gladney and Roelandts (31).

The key to analytical method codes (METHOD) is given in Table IV. The key to the COMMENT code is given in Table V. All data reported as oxides in the original references were converted to elemental form using the conversion factors shown in Table VI. The individual data (CONC), their uncertainties when provided (UNCER), analytical technique used (METHOD), and the individual references are given in Tables numbered xxxx-2 for each SRM. These tables were generated with user-written Datatrieve "procedures," the VAX Datatrieve report writing facilities and the DEC Keypad editor. All tables were printed on a Hewlett-Packard LaserJet printer. Data that were reported as "greater-than" values have been omitted entirely, and "less-than" values are shown as "<" under CONC and "L" under COMMENT. As mentioned above, less-than values that no longer offer any useful perspective on elements with well-established values have been dropped from the database to conserve space. The data have been sorted in ascending order based upon material, constituent, and concentration using VAX Datatrieve. All the references (CODE and NUM) have been identified in Reference Appendix. The CODE consists of the last two digits of the year of publication plus the first three letters of the first author's last name. The two digit numerical suffix (NUM) is provided to enable handling of multiple reports by the same first author in the same year. This particular reference coding system was adopted in preference to a sequential numbering system in 1980 to permit rapid searching of the reference database using Datatrieve, and to permit easy random updating of both the reference and concentration databases without the necessity of renumbering the references. Since over 4000 references with data on various NBS, United States Geological Survey (USGS), and Canadian Certified Reference Materials Project (CCRMP) materials are now in our system, these considerations are extremely important.

4. Conclusion

Although we have endeavored to achieve as wide a coverage of the literature as possible, we realize that this compilation is still incomplete. We appreciate the efforts of those investigators who have sent us their data directly, and we continue to request that the users of this compilation call our attention to omissions and errors so that they may be corrected in subsequent editions. Anyone with unpublished results or data published in "technical reports" that may not be widely circulated, on any NBS, USGS, or CCRMP reference materials are urged to send their data to the first author of this compilation and it will be placed in our database with appropriate reference to the source.

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CREDIT

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REFERENCES

1. Gladney, E. S., C. E. Burns, D. R. Perrin, I. Roelandts, and T. E. Gills, "1982 Compilation of Elemental Concentration Data for NBS Biological, Geological, and Environmental Standard Reference Materials," NBS Special Publication 260-88, 221 pp., 1984.

2. Taylor, J. K., Anal. Chem., 53: 1588A-1596A (1981).

3. Taylor, J. K., "Reference Materials -- How They Are, or How They Should be Used," Presented at the ASTM C-26 Committee Meeting, Knoxville, TN, 1982.

4. Taylor, J. K., Anal. Chem., 55: 600A-608A (1983).

5. Taylor, J. K., "Handbook for SRM Users," NBS Special Publication 260-100, 1985.

6. Uriano, G. A., and C. C. Gravatt, Crit. Rev. Anal. Chem., 6: 361-411 (1977).

7. Nadkarni, R. A. and G. H. Morrison, J. Radioanal. Chem, 43: 347-369 (1978).

8. Gladney, E. S., Anal. Chim. Acta, 118: 385-396 (1980).

9. Gladney, E. S., "Compilation of Elemental Concentration Data for NBS Biological and Environmental Standard Reference Materials," Los Alamos Scientific Laboratory Report LA-8438-MS, Los Alamos, New Mexico, 119 pp., 1980.

10. Gladney, E. S., "Compilation of Elemental Concentration Data for United States Geological Survey's Eight New Rock Standards," Los Alamos Scientific Laboratory Report LA-8265-MS, Los Alamos, New Mexico, 55 pp., 1980.

11. Gladney, E. S., "Compilation of Elemental Concentration Data for Fourteen Canadian Certified Reference Materials Project Standards," Los Alamos Scientific Laboratory Report LA-8382-MS, Los Alamos, New Mexico, 28 pp., 1980.

12. Gladney, E. S., "Compilation of Elemental Concentration Data for the United States Geological Survey's Six Geochemical Exploration Reference Materials," Los Alamos Scientific Laboratory Report LA-8473-MS, Los Alamos, New Mexico, 18 pp., 1980.

13. Gladney, E. S. and W. E. Goode, Geostandards Newsletter, 5: 31-64 (1981).

14. Gladney, E. S., "Comparison of Methods for Calculation of Recommended Elemental Concentrations for Canadian Certified Reference Materials Project Rock Standards SY-2, SY-3, and MRG-1," Los Alamos Scientific Laboratory Report LA-8770-MS, Los Alamos, New Mexico, 4 pp., 1981.

15. Gladney, E. S., C. E. Burns, and I. Roelandts, Geostandards Newsletter, 7: 3-226 (1983).

16. Gladney, E. S., C. E. Burns, and I. Roelandts, Geostandards Newsletter, 8: 119-154 (1984)

17. Gladney, E. S., C. E. Burns, and I. Roelandts, Geostandards Newsletter, 9: 35-68 (1985).

18. Abbey, S. and E. S. Gladney, Geostandards Newsletter, 10: 3-11 (1986).

19. Flanagan, F. J., Geochim. Cosmochim. Acta, 37: 1189-1200 (1973).

20. Abbey, S., Geostandards Newsletter, 2: 141-146 (1978).

21. Abbey, S., X-ray Spect., 7: 99-121 (1978).

22. Roubault, M., H. de la Roche, and K. Govindaraju, Sciences de la Terre, Nancy, IX: 105-121 (1966).

23. Steele, T. W., A. Wilson, R. Goudvis, P. J. Ellis, and A. J. Radford, "Analysis of the NIMROC Reference Samples for Minor and Trace Elements," National Institute of Metallurgy report 1945, 222 pp.

24. Lister, B., Geostandards Newsletter, 8: 171-172 (1984).

25. Flanagan, F. J., "Three USGS Mafic Rock Reference Samples, W-2, DNC-1, and BIR-1," U.S. Geological Survey Bulletin 1623, 54 pp., 1984.

26. Abbey, S. and R. M. Rosseau, Geostandards Newsletter, 9: 1-16 (1985).

27. Lister, B., Geostandards Newsletter, 9: 263-273 (1985).

28. Abbey, S., Geostandards Newsletter, 10: 159-168 (1986).

29. Flanagan, F. J., "Reference Samples in Geology and Geochemistry," U. S. Geological Survey Bulletin 1582, 72 pp., 1986.

30. Gladney, E. S., "Data Base Design and Management for Elemental Compositional Studies of Environmental and Geological Reference Materials," Los Alamos National Laboratory report, in press, 1987.

31. Gladney, E. S. and I. Roelandts, "Distribution of NBS, USGS, and CCRMP Reference Material Data in the Literature (1951-1985)," Geostandards Newsletter, 11: in press (1987).

TABLE I: NATIONAL BUREAU OF STANDARDS BIOLOGICAL, ENVIRONMENTAL, AND GEOLOGICAL STANDARD REFERENCE MATERIALS

SRM Number	Name	Certification Date	# data (1986)	% New (1986)
1A	Argillaceous Limestone	1931	98	19
1b	Argillaceous Limestone	1966	77	32
1c	Argillaceous Limestone	1978	37	100
27F	Iron Ore (Sibley)	1977	1	100
56	Tennessee Phosphate Rock	1927	1	0
56B	Phosphate Rock (Tennessee Brown)	1947	3	0
69A	Bauxite	1951	81	44
69B	Bauxite (Arkansas)	1979	0	--
70	Feldspar	1926	24	0
70a	Feldspar	1981	64	22
76	Burnt Refractory	1955	10	0
76A	Burnt Refractory	1985	0	--
77	Burnt Refractory	1955	12	0
77A	Burnt Refractory	1985	0	--
78	Burnt Refractory	1955	2	0
78A	Burnt Refractory	1985	0	--
79A	Fluorspar	1971	1	100
80	Soda-Lime Glass	1927	2	0
81A	Glass Sand	1978	0	--
88	Dolomite	1928	14	21
88A	Dolomitic Limestone	1982	100	48
88B	Dolomitic Limestone	1986	0	--
91	Opal Glass	1931	54	20
92	Soda-Lime Glass Powder	1982	3	100
93A	Borosilicate Glass	1973	2	0
97	Flint Clay	1931	86	3
97A	Flint Clay	1969	64	22
98	Plastic Clay	1931	134	0
98A	Plastic Clay	1969	60	20
99	Soda Feldspar	1931	57	2
99A	Feldspar	1981	42	12
120A	Phosphate Rock (Florida)	1961	21	24
120B	Phosphate Rock (Florida)	1979	188	43
181	Lithium Ore (Spodumene)	1981	1	100
182	Lithium Ore (Petalite)	1981	0	--
183	Lithium Ore (Lepidolite)	1981	0	--
278	Obsidian Rock	1981	296	59
330	Copper Ore, Mill Heads	1977	0	--
331	Copper Ore, Mill Tails	1977	0	--
332	Copper Concentrate	1977	1	100
333	Molybdenum Concentrate	1977	0	--
470	Mineral Glasses for Microanalysis	1979	0	--
610	Trace Elements in Glass (500 ppm)	1972	126	72
612	Trace Elements in Glass (50 ppm)	1982	112	85
614	Trace Elements in Glass (1 ppm)	1982	81	84
616	Trace Elements in Glass (0.02 ppm)	1982	24	88

TABLE I: NATIONAL BUREAU OF STANDARDS BIOLOGICAL, ENVIRONMENTAL, AND GEOLOGICAL STANDARD REFERENCE MATERIALS (cont.)

SRM Number	Name	Certification Date	# data (1986)	% New (1986)
633	Portland Cement	1974	11	100
634	Portland Cement	1974	3	100
635	Portland Cement	1974	10	100
636	Portland Cement	1974	11	100
637	Portland Cement	1974	10	100
638	Portland Cement	1974	10	100
639	Portland Cement	1974	10	100
688	Basalt Rock	1981	255	76
694	Western Phosphate Rock	1984	0	--
696	Bauxite (Surinam)	1979	30	100
697	Bauxite (Dominican)	1979	0	--
698	Bauxite (Jamaican)	1979	33	100
909	Human Serum	1985	0	--
1083	Wear-Metals in Lubricating Oil	1985	0	--
1084	Wear-Metals in Lubridating Oil	1985	30	100
1085	Wear-Metals in Lubricating Oil	1985	27	100
1549	Non-Fat Milk Powder	1984	56	100
1566	Oyster Tissue	1983	425	77
1567	Wheat Flour	1978	317	55
1568	Rice Flour	1978	269	58
1569	Brewer's Yeast	1976	139	12
1570	Trace Elements in Spinach	1976	715	36
1571	Orchard Leaves	1977	3113	27
1572	Citrus Leaves	1982	139	89
1573	Tomato Leaves	1976	758	34
1575	Pine Needles	1976	664	34
1577	Bovine Liver	1977	2262	23
1577a	Bovine Liver	1982	216	100
1581A	PCBs in Oil	1982	0	--
1581B	PCBs in Oil	1982	0	--
1581C	PCBs in Oil	1982	0	--
1581D	PCBs in Oil	1982	0	--
1582	Petroleum Crude Oil	1984	8	100
1584	Priority Pollutant Phenols	1984	10	100
1585	Chlorinated Biphenyls	1986	0	--
1587	Nitrated Polycyclic Aromatic Hydrocarbons	1985	0	--
1590	Stabililzed Wine	1985	4	100
1614	Dioxin	1985	0	--

TABLE I: NATIONAL BUREAU OF STANDARDS BIOLOGICAL, ENVIRONMENTAL, AND GEOLOGICAL STANDARD REFERENCE MATERIALS (cont.)

SRM Number	Name	Certification Date	# data (1986)	% New (1986)
1618	Vanadium and Nickel in Residual Fuel Oil	1985	0	--
1619	Sulfur in Residual Fuel Oil	1981	18	100
1620	Sulfur in Residual Fuel Oil	1979	0	--
1620a	Sulfur in Residual Fuel Oil	1981	19	100
1621	Sulfur in Residual Fuel Oil	1967	5	20
1621a	Sulfur in Residual Fuel Oil	1980	7	14
1621b	Sulfur in Residual Fuel Oil	1981	7	100
1622	Sulfur in Residual Fuel Oil	1967	2	100
1622a	Sulfur in Residual Fuel Oil	1979	5	20
1622b	Sulfur in Residual Fuel Oil	1981	7	100
1622c	Sulfur in Residual Fuel Oil	1986	0	--
1623	Sulfur in Residual Fuel Oil	1971	4	0
1623a	Sulfur in Residual Fuel Oil	1981	6	100
1624	Sulfur in Distillate Fuel Oil	1971	4	0
1624a	Sulfur in Distillate (Diesel) Fuel Oil	1981	6	100
1630	Trace Mercury in Coal	1971	72	4
1631A	Sulfur in Coal	1974	8	50
1631B	Sulfur in Coal	1974	6	33
1631C	Sulfur in Coal	1974	7	43
1632	Trace Elements in Coal	1974	1810	16
1632A	Trace Elements in Coal (Bituminous)	1983	952	51
1632B	Trace Elements in Coal (Bituminous)	1985	0	--
1633	Trace Elements in Coal Fly Ash	1975	2057	13
1633A	Trace Elements in Coal Fly Ash	1985	850	60
1634	Trace Elements in Fuel Oil	1975	138	17
1634A	Trace Elements in Fuel Oil	1982	95	100
1634B	Trace Elements in Fuel Oil	1986	0	--
1635	Trace Elements in Coal (Subbituminous)	1979	454	46
1639	Halocarbons for Water Analysis	1983	0	--
1641	Mercury in Water - Concentrate	1975	1	0
1641A	Mercury in Water - ug/mL	1978	0	--
1641B	Mercury in Water - ug/mL	1983	1	100
1642	Mercury in Water - Trace	1974	0	--
1642A	Mercury in Water - ng/mL	1977	4	75
1642B	Mercury in Water - ng/mL	1982	2	100
1643	Trace Elements in Water	1977	132	61
1643A	Trace Elements in Water	1980	313	88
1643B	Trace Elements in Water	1984	29	100
1645	River Sediment	1982	524	64
1646	Estuarine Sediment	1982	173	98
1647	Priority Pollutant Polynuclear Aromatic Hydrocarbons	1981	13	100
1648	Urban Particulate Matter	1982	371	33
1649	Urban Dust/Organics	1982	64	64

TABLE I: NATIONAL BUREAU OF STANDARDS BIOLOGICAL, ENVIRONMENTAL, AND GEOLOGICAL STANDARD REFERENCE MATERIALS (cont.)

SRM Number	Name	Certification Date	# data (1986)	% New (1986)
1818	Total Chlorine in Lubricating Base Oil	1986	0	--
1819	Sulfur in Lubricating Base Oil	1985	0	--
1880	Portland Cement	1984	0	--
1881	Portland Cement	1984	0	--
2661	Benzene on Charcoal	1977	0	--
2661A	Benzene on Charcoal	1978	2	100
2662	m-Xylene on Charcoal	1977	0	--
2663	p-Dioxane on Charcoal	1977	1	100
2664	1,2-Dichloroethane on Charcoal	1977	2	100
2665	Chloroform on Charcoal	1977	1	100
2666	Trichloroethylene on Charcoal	1977	1	100
2667	Carbon tetrachloride on Charcoal	1977	1	100
2670	Toxic Metals in Freeze-Dried Urine	1985	17	100
2671	Freeze Dried Urine Certified for Fluorine	1975	0	--
2672	Freeze-Dried Urine Certified for Mercury	1975	3	100
2674	Lead on Filter Media	1979	0	--
2675	Beryllium on Filter Media	1975	1	100
2676	Metals on Filter Media	1975	0	--
2676A	Metals on Filter Media	1978	9	100
2676B	Metals on Filter Media	1983	0	--
2677	Beryllium and Arsenic on Filter Media	1985	0	--
2679	Quartz on Filter Media	1976	0	--
2682	Sulfur in Coal	1983	75	100
2683	Sulfur in Coal	1983	67	100
2684	Sulfur in Coal	1983	67	100
2685	Sulfur in Coal	1983	67	100
2689	Coal Fly Ash	1986	0	--
2690	Coal Fly Ash	1986	0	--
2691	Coal Fly Ash	1986	0	--
2694	Simulated Rainwater	1986	0	--
4350	Environmental Radioactivity Standard: River Sediment	1975	12	67
4350B	Environmental Radioactivity: River Sediment	1981	23	74
4351	Environmental Radioactivity: Human Lung	1982	0	--
4352	Environmental Radioactivity: Human Liver	1982	0	--
4353	Environmental Radioactivity: Rocky Flats Soil #1	1981	28	82
4355	Environmental Radioactivity: Peruvian Soil	1982	0	--
8412	Corn (Zea Mays) Stalk	1986	0	--
8413	Corn (Zea Mays) Kernel	1986	0	--
8419	Bovine Serum	1985	84	100
8431	Mixed Diet	1986	0	--

TABLE II: LITERATURE SURVEYED

Journal	Vol. #	# data	% total
Acta Chimica Hungarica	113 - 119	0	---
Acta Chimica Scandanavia	39A, 39B	0	---
American Laboratory	11 - 17	132	0.6
American Mineralogist	67 - 70	0	---
Analusis	1 - 13	128	0.6
Analyst	97 - 110	922	4.6
Analytica Chimica Acta	53 - 178	1115	5.5
Analytical Chemistry	44 - 57	3574	17.7
Analytical Instrumentation	13 - 14	0	---
Analytical Letters	1 - 18	97	0.5
Annales de la Societe Geologique de Belgique	91 - 108	0	---
Applied Spectroscopy	25 - 39	265	1.3
Atomic Absorption Newsletter	1 - 18	111	0.6
Atomic Spectrometry	1 - 6	169	0.8
Biological Trace Element Research	1 - 8	31	0.2
Bulletin des Societes Chimiques Belges	80 - 94	3	<0.1
Bunseki Kagaku	24 - 34	966	4.8
Canadian Journal of Earth Sciences	9 - 22	20	0.1
Canadian Journal of Spectroscopy	20 - 30	59	0.3
Chemical Geology	13 - 53	108	0.5
Comptes-Rendus Hebdomadaires des Seances de l'Academie des Sciences (Paris)	272 - 301	1	<0.1
Conference Proceedings	---	1523	7.6
Contributions to Mineralogy and Petrology	36 - 91	10	<0.1
Earth and Planetary Science Letters	1 - 77	15	<0.1
Economic Geology	67 - 80	0	---
Environmental Geology	1 - 5	9	<0.1
Environmental Letters	1 - 10	13	<0.1
Environmental Pollution	29A - 39A 1B - 10B	22	0.1
Environmental Research	1 - 38	4	<0.1
Environmental Science and Technology	5 - 19	469	2.3
Fresenius Zeitschrift fur Analytische Chemie	244 - 322	589	2.9
Geochemistry International (trans. from Geokhimiya)	9 - 22	0	---
Geophysical Research Letters	1 - 7	25	0.1
Geochimica et Cosmochimica Acta	36 - 49	169	0.8
Geostandards Newsletter	1 - 9	1146	5.7
Geotechnical Testing Journal	1 - 7	0	---
Geochemical Journal	7 - 19	6	<0.1
International Journal of Applied Radiation and Isotopes	23 - 36	14	<0.1
International Journal of Environmental Analytical Chemistry	1 - 23	161	0.8
International Journal of Environmental Studies	1 - 25	9	<0.1
Journal of Analytical Chemistry of USSR (trans. of Zhurnal Analiticheskoi Khimii)	26 - 38	0	---
Journal of Environmental Quality	1 - 14	14	<0.1
Journal of Environmental Radioactivity	1 - 3	0	---
Journal of Environmental Science and Health	11 - 20	79	0.4
Journal of Geochemical Exploration	1 - 24	0	---
Journal of Petrology	12 - 26	0	---

TABLE II: LITERATURE SURVEYED (cont.)

Journal	Vol. #	# data	% total
Journal of Radioanalytical and Nuclear Chemistry	10 - 96	2436	12.1
Journal of Research of the USGS	1 - 6	25	0.1
Journal of the Association of Official Analytical Chemists	55 - 68	734	3.6
Journal of the Geological Society (London)	127 - 142	0	---
Journal of the Soil Science Society of America	46 - 48	2	<0.1
Journal of the South African Chemical Institute	21 - 37	0	---
Journal of Volcanology and Geothermal Research	1 - 26	0	---
Lithos	4 - 18	0	---
Marine Geology	12 - 44	0	---
Mass Spectroscopy	31 - 32	0	---
Microchemical Journal	17 - 28	3	<0.1
Mikrochimica Acta (Wien)	1972 - 1984	98	0.5
Mineralogy Magazine	40 - 44	0	---
Nuclear Instruments and Methods	114 - 172	268	1.3
Precambrian Research	1 - 14	2	<0.1
Private (Written) Communication	---	278	1.4
Radiochimica Acta	17 - 38	0	---
Radiochemical and Radioanalytical Letters	1 - 59	468	2.3
Reports and Books	---	2617	13.0
Sedimentology	16 - 28	0	---
Spectrochimica Acta	27B - 40B	423	2.1
Spectroscopy Letters	17 - 18	0	---
Talanta	19 - 32	238	1.2
X-ray Spectrometry	1 - 14	179	0.9
Misc. sources	---	364	
Total	---	20113	100.0

TABLE III: WHOLE MATERIAL CONCENTRATION SUMMATIONS OF MAJOR AND MINOR ELEMENTS FOR SELECTED NBS SRMs (%)

	1633	1633A	1632	1632A	1635
ELE	CONSENSUS Mean ± SD	CONSENSUS Mean ± SD	CONSENSUS Mean ± SD	CONSENSUS Mean ± SD	CONSENSUS Mean ± SD
Al	12.6 ± 0.6	14.4 ± 0.7	1.73 ± 0.10	2.95 ± 0.10	0.295 ± 0.027
Ba	0.266 ± 0.016	0.142 ± 0.010	---	---	---
C	3.3 ± 0.2	---	70.6 ± 1.7	64.4 ± 3.9	62.6
Ca	4.65 ± 0.34	1.14 ± 0.06	0.418 ± 0.042	0.241 ± 0.017	0.535 ± 0.034
Fe	6.16 ± 0.27	9.37 ± 0.23	0.851 ± 0.044	1.11 ± 0.03	0.229 ± 0.006
H	0.02	0.04	4.29 ± 0.22	4.1 ± 0.4	4.07
K	1.69 ± 0.09	1.88 ± 0.05	0.278 ± 0.017	0.411 ± 0.02	---
Mg	1.5 ± 0.3	0.457 ± 0.045	0.156 ± 0.041	0.115 ± 0.02	0.104 ± 0.013
N	---	---	1.20 ± 0.14	1.25 ± 0.04	1.16 ± 0.32
Na	0.3130 ± 0.02	0.173 ± 0.011	---	---	0.239 ± 0.020
O	47.02	47.66	12.6	18.8 ± 0.8	30 ± 8
P	0.101 ± 0.018	0.169 ± 0.024	---	---	---
S	0.450 ± 0.050	0.190 ± 0.070	1.32 ± 0.08	1.55 ± 0.05	0.336 ± 0.024
Si	22.0 ± 1.0	23.0 ± 0.9	3.08 ± 0.24	5.87 ± 0.22	0.590 ± 0.050
Sr	0.138 ± 0.010	---	---	---	---
Ti	0.710 ± 0.050	0.823 ± 0.039	---	0.163 ± 0.01	---
Other	0.33	0.39	0.33	0.27	0.01
Total	101.25 ± 1.3	99.83 ± 1.17	96.85 ± 1.74	101.23 ± 4.01	100.2 ± 8.1

	278	688
OXIDE	CONSENSUS Mean ± SD	CONSENSUS Mean ± SD
Al_2O_3	14.39 ± 0.25	17.33 ± 0.30
BaO	0.11 ± 0.01	---
CO_2	0.18	0.05
CaO	1.00 ± 0.02	11.85 ± 0.50
Fe_2O_3	0.49	1.8
FeO	1.38	7.645
H_2O^+	0.30	0.14
H_2O^-	0.05	0.11
K_2O	4.07 ± 0.12	0.19 ± 0.01
MgO	0.25	8.72 ± 0.36
MnO	0.05 ± 0.01	0.16 ± 0.01
Na_2O	4.72 ± 0.05	2.09 ± 0.11
P_2O_5	0.03	0.16 ± 0.05
SiO_2	71.52 ± 1.28	48.22 ± 0.32
TiO_2	0.24 ± 0.01	1.18 ± 0.03
Other	0.16	0.17
Total	98.98 ± 1.31	99.82 ± 0.77

TABLE IV: ANALYTICAL METHOD CODES FOR INDIVIDUAL DATA TABLES

Code	Specific Technique
14NAA	14 MeV Neutron Activation Analysis
AA	General, Flame Atomic Absorption: Unspecified, or Mixed Conditions
AAC	Flame Atomic Absorption Preceeded by Chemical Separation
ABS	Absorption (69FLA 01)
AE+AF	Atomic Emission + Atomic Fluorescence
AF	Atomic Fluorescence
AS	Alpha Spectrometry
ASV	Anodic Stripping Voltammetry
CALC	Calculated
CB	Combustion: Elemental Analyzer
CB-GC	Combustion + Gas Chromatography
CHEM	Chemical (taken from several other compilers, usually undefined)
CHEML	Chemiluminescence, Candoluminescence
CHROM	Chromatographic
COLOR	Colorimetry, Photometry, Spectrophotometry
CONV	Conventional (taken from several other compilers, usually undefined)
COUL	Coulometry
CPAA	Charged Particle Activation Analysis
CPXRF	Charged Particle Induced X-ray Fluorescence
CSV	Cathodic Stripping Voltammetry
CVAA	Cold Vapor Atomic Absorption
DCPES	Direct Coupled Plasma Atomic Emission Spectrometry
DNA	Delayed Neutron Activation Analysis
ESCA	Electron Spectroscopy for Chemical Applications
ESR	Electron Spin Resonance
EXRF	Energy Dispersive X-ray Fluorescence
FA	Fire Assay
FA-AA	Fire Assay-Atomic Absorption
FA-OS	Fire Assay-Optical Emission Spectrometry
FAA	Flameless Atomic Absorption (Electrothermal, Carbon Rod)
FAAC	Flameless Atomic Absorption Preceeded by Chemical Separation
FAE	Flameless Atomic Emission
FD	Freeze Drying
FE	Flame Emission, Flame Photometry, Atomic Emission
FLUOR	Fluorometry
GAMMA	Direct Gamma-ray Counting (without activation)
GC	Gas Chromatography
GC-AA	Gas Chromatography-Atomic Absorption Spectrometry
GC-MS	Gas Chromatography-Mass Spectrometry
GCMES	Gas Chromatography Microwave Emission
GE	Gas Evolution (CO_2 in rocks)
GRAV	Gravimetry
HAA	Hydride Evolution Atomic Absorption
I	Infrared
IC	Ion Chromatography
ICPAF	Inductively Coupled Plasma Atomic Fluorescence
ICPES	Inductively Coupled Plasma Atomic Emission Spectrometry
ICPMS	Inductively Coupled Plasma Mass Spectrometry
IDMS	Isotope Dilution Mass Spectrometry
IE	Ion Exchange (76FLA 04)
IENA	Instrumental Epithermal Neutron Activation
ISE	Ion Selective Electrodes
ITNA	Instrumental Thermal Neutron Activation
KF	Karl Fischer Method for H_2O^+
LC	Liquid Chromatography (reversed or normal phase)
MECA	Molecular Emission Cavity Analysis
MOSS	Mossbauer Spectroscopy
MPOES	Microwave Plasma Optical Emission Spectrometry
MS	General Mass Spectrometry
NAA	Neutron Activation Analysis: General, unspecified, or mixed conditons
NM	Nuclear Methods (general)
NT	Nuclear Track
OES	General, DC Arc Optical Emission Spectrometry
PAA	Photon Activation or X-ray Activation Analysis
PC	Paper Chromatography
PEN	Penfield Method (H_2O^+)
POL	Polarography
POT	Potentiometry (69FLA 01, 69FLE 01)
PM	Petrographic Microscope
PROBE	Ion or Electron Microprobe Mass Analyzer
PYHYD	Pyrohydrolysis
RENA	Radiochemical Epithermal Neutron Activation
RR	Rapid rock
RTNA	Radiochemical Thermal Neutron Activation
SIMS	Secondary Ion Mass Spectrometry
SM	Semi-micro (69FLE 01)
SSMS	Spark-source Mass Spectrometry
TC	Thermal Conductivity
TCGS	Thermal Neutron Capture Prompt Gamma-ray Spectrometry
TITR	Titrimetry
TURB	Turbidimetry
UU	Unspecified
VOLT	Voltammetry (76FLA 04)
VOLU	Volumetry (76FLA 04)
VV	Various, Mixed Methods
WXRF	Wavelength Dispersive X-ray Fluorescence
XRF	General or Unspecified X-ray Fluorescence

TABLE V: COMMENT Codes for Individual Data Tables

Code	Definition
*	Data eliminated from all mean value calculations.
D	Same data reported in two or more references. Duplicate data are flagged and oldest reference used in mean calculations.
H	Hydride generation
L	Limit (less than) data. Not used in computations.
R	Concentration range. Not used in computations.
1	Different nebulizers used for independent results.
2	V_2O_5 catylist used in dissolution.
3	Different electrodes used for independent results.
4	Aqueous slurry of reground sample.
5	Different radioactive isotopes or irradiation conditions used for independent results.
6	Different methods of standardization used for independent results.
7	Different chemical separation methods used for independent results.
8	Isotope dilution methods combined with spark source mass spectrometry.
9	Gamma-gamma coincidence.
10	Different neutron filters used for independent results by epithermal neutron activation analysis.
11	Different dissolution or matrix destruction methods used for independent results.
12	Different methods of peak integration or dead time correction used for independent results.
13	Different detectors used for independent results.
14	Different furnace configurations used for independent results.
15	Different laboratories prepared fused beads used for independent results.
16	Different matrix correction methods used for independent results.
17	Different laboratories or analysts reporting independent results in same reference.
18	Different bottles of reference material used for independent results.
19	Duplicate entries from same reference from previous data compilation assembled by another compiler; reason for duplication unknown.
20	Different emission/absorption lines used for independent results.
21	Dichromate used for FEO determination (76FLA 04).
22	Vanadate used for FEO determination (76FLA 04).
23	Modified Penfield method used for H_2O^+ determination.
24	Different irradiation containers used for independent results.
25	Different colorimetric methods used for independent results.
26	CONC and UNCER should be multiplied by 10(-5).
28	CONC and UNCER should be multiplied by 10(-3).
30	Results were used by NBS to determine certified values.
31	Different chemical methods used for independent results.
32	Different background correction or excitation sources or crystals used for independent results by XRF.
33	Different pellet sizes used for independent results.
34	Reported on a dry weight basis.
35	Reported on an as-received basis.
36	OES pre-ignition at various temperatures for independent results.
37	Karl Fischer titration for H_2O^+.
38	CONC and UNCER are X10(9), A/G=atoms/gram
40	Different gamma-rays from the same isotope used for independent results.
41	Acid evolution method for CO_2 determination.
44	Different conditions employed for independent results by Liquid Chromatography.

TABLE VI: Factors Used for Oxide to Element Conversions

Oxide	Multiplier	Oxide	Multiplier
Al_2O_3	0.529	Mn_2O_3	0.696
B_2O_3	0.311	Mn_3O_4	0.720
BaO	0.896	MoO_3	0.667
BeO	0.360	Na_2O	0.742
CO_2	0.273	Nd_2O_3	0.857
CaO	0.715	NiO	0.786
CdO	0.875	P_2O_5	0.436
CoO	0.786	PbO	0.928
Cr_2O_3	0.684	Rb_2O	0.914
Cs_2O	0.943	SiO_2	0.467
CuO	0.799	SO_3	0.400
FeO to Fe_2O_3	1.112	Sc_2O_3	0.652
FeO	0.777	SrO	0.846
Fe_2O_3	0.699	TiO_2	0.599
Ga_2O_3	0.592	U_3O_8	0.848
K_2O	0.830	V_2O_5	0.560
La_2O_3	0.853	Y_2O_3	0.787
Li_2O	0.465	ZnO	0.803
MgO	0.603	ZrO_2	0.740
MnO	0.774		

TABLE 1A-1: COMPILED DATA FOR NBS SRM 1A ARGILLACEOUS LIMESTONE (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	XRF	OES		OTHER METHODS		
		Mean	Mean ± SD	(n)			Mean	Mean ± SD	(n)	Mean ± SD	(n)	Method
Al	%	2.2	2.23 ± 0.08	(7)	2.23	2.1 - 2.36	---	2.16	(2)	2.18	(2)	COLOR
Al	%	---	---		---	---	---	---		2.36	(1)	RR
Al	%	---	---		---	---	---	---		2.29	(1)	TITR
Al	%	---	---		---	---	---	---		2.27	(1)	DCPES
As	ug/g	---	1.6	(1)	---	---	---	---		1.6	(1)	AA
B	ug/g	---	90	(2)	---	80 - 100	---	90	(2)	---		
Ba	ug/g	---	< 800		---	---	---	< 800		---		
Be	ng/g	---	670	(1)	---	---	---	---		670	(1)	AA
Bi	ng/g	---	57	(1)	---	---	---	---		57	(1)	AA
C-I	%	9.15	9.05 ± 0.20	(3)	9.16	8.82 - 9.17	---	---		9.05 ± 0.20	(3)	COUL
C-O	ug/g	6100	5600	(1)	---	---	---	---		5600	(1)	CALC
C-T	%	---	9.72	(2)	---	9.72 - 9.73	---	---		9.72	(1)	COUL
C-T	%	---	---		---	---	---	---		9.73	(1)	CB
Ca	%	29.54	29.6 ± 0.1	(3)	29.6	29.5 - 29.7	29.6	(1) ---		29.7	(1)	DCPES
Ca	%	---	---		---	---	---	---		29.5	(1)	RR
Cd	ng/g	---	32	(1)	---	---	---	---		32	(1)	AA
Co	ug/g	---	3.9	(1)	---	---	---	---		3.9	(1)	NAA
Cr	ug/g	---	26.5	(2)	---	23 - 30	---	30	(1)	23	(1)	NAA
Cu	ug/g	---	3	(1)	---	---	---	3	(1)	---		
Fe	%	1.14	1.11 ± 0.03	(5)	1.1	1.08 - 1.15	---	1.08	(1)	1.1	(1)	COLOR
Fe	%	---	---		---	---	---	---		1.08	(1)	DCPES
Fe	%	---	---		---	---	---	---		1.15	(1)	TITR
Fe	%	---	---		---	---	---	---		1.13	(1)	RR
Ga	ug/g	---	4	(1)	---	---	---	4	(1)	---		
Hg	ng/g	---	57.7	(2)	---	44 - 71.4	---	---		57.7	(2)	AA
K	ug/g	5900	6900	(1)	---	---	---	---		6900	(1)	RR
La	ug/g	---	100	(1)	---	---	---	100	(1)	---		
LOI	%	34.55	---		---	---	---	---		---		
Mg	%	1.32	1.34 ± 0.05	(4)	1.3	1.29 - 1.39	---	1.30	(2)	1.39	(1)	DCPES
Mg	%	---	---		---	---	---	---		1.37	(1)	RR
Mn	ug/g	290	440 ± 100	(3)	500	320 - 500	---	440 ± 100	(3)	---		
Mo	ug/g	---	< 1		---	---	---	< 1		---		
Na	ug/g	2890	2500	(2)	---	2300 - 2700	---	---		2700	(1)	DCPES
Na	ug/g	---	---		---	---	---	---		2300	(1)	RR
Ni	ug/g	---	10	(1)	---	---	---	10	(1)	---		
P	ug/g	650	1075	(2)	---	650 - 1500	650	(1) 1500	(1)	---		
Pb	ug/g	---	19.3 ± 1.6	(4)	19.1	17.2 - 21	---	20	(1)	19.1 ± 1.9	(3)	AA
S	ug/g	2500	2850 ± 160	(8)	2800	2620 - 3073	---	2800	(1)	2840 ± 200	(5)	CB
S	ug/g	---	---		---	---	---	---		3000	(1)	TURB
Sb	ng/g	---	630	(1)	---	---	---	---		630	(1)	AA
Sc	ug/g	---	15	(1)	---	---	---	15	(1)	---		
Si	%	6.59	6.60 ± 0.08	(5)	6.58	6.53 - 6.72	6.53	(1) 6.54	(1)	6.63	(1)	COLOR
Si	%	---	---		---	---	---	---		6.58	(1)	RR
Si	%	---	---		---	---	---	---		6.72	(1)	DCPES
Sn	ug/g	---	2.13	(2)	---	1.68 - 2.58	---	---		2.13	(2)	AA
Sr	ug/g	1950	1910 ± 140	(4)	1940	1700 - 2000	---	1880 ± 160	(3)	2000	(1)	NAA
Ti	ug/g	960	940 ± 50	(4)	960	900 - 1000	---	1250	(2)	900	(1)	DCPES
Ti	ug/g	---	---		---	---	---	---		960	(1)	NAA
Ti	ug/g	---	---		---	---	---	---		900	(1)	RR
U	ug/g	---	156	(1)	---	---	---	---		156	(1)	ICPES
V	ug/g	---	30	(1)	---	---	---	30	(1)	---		
Y	ug/g	---	10	(1)	---	---	---	10	(1)	---		
Zn	ug/g	---	20.15	(2)	--	17 - 23.3	17	(1) ---		23.3	(1)	NAA
Zr	ug/g	---	60	(1)	---	--	---	60	(1)	---		

TABLE 1A-2: INDIVIDUAL DATA FOR NBS SRM 1A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (%)				
2.1			OES	62JOE 01
2.17	0.01	11	COLOR	83OHM 01
2.19	0.01	11	COLOR	83OHM 01
2.23			OES	78KNO 01
2.27			DCPES	73KAR 01
2.29			TITR	58WAT 01
2.36			RR	73KAR 01
As (ug/g)				
1.6			HAA	84TER 04
B (ug/g)				
80		3	OES	63CLA 01
100		3	OES	63CLA 01
Ba (ug/g)				
<	800	L	OES	63CLA 01
Be (ng/g)				
670			AA	82TER 02
670		D	AA	83TER 01
Bi (ng/g)				
57		D	FAA	84TER 03
57			HAA	84TER 02
C-I (%)				
8.8234	0.5651	41	COUL	85ENG 01
9.16	0.07	41	COUL	86CAH 01
9.1673	0.0273	41	COUL	85ENG 01
C-O (ug/g)				
5600	1800		CALC	86CAH 01
C-T (%)				
9.72	0.17		COUL	86CAH 01
9.73			CB	78TER 01
Ca (%)				
28.6			OES	62JOE 01
29.5			RR	73KAR 01
29.6			XRF	78KNO 01
29.7			DCPES	73KAR 01

Conc	Uncer	Com	Method	Reference
Cd (ng/g)				
32			AA	84TER 01
Co (ug/g)				
<	10	L	OES	63CLA 01
3.9	1.4		RTNA	61TUR 01
Cr (ug/g)				
23			RTNA	61TUR 01
30			OES	63CLA 01
Cu (ug/g)				
3			OES	63CLA 01
Fe (%)				
0.855			OES	62JOE 01
1.08			OES	78KNO 01
1.08			DCPES	73KAR 01
1.1			COLOR	59COL 01
1.13			RR	73KAR 01
1.15			TITR	69WIC 01
Ga (ug/g)				
4			OES	63CLA 01
Hg (ng/g)				
44			FAA	75HEI 01
71.4	2.16		FAA	82FLA 01
K (ug/g)				
6900			RR	73KAR 01
La (ug/g)				
100			OES	63CLA 01
Mg (%)				
1.29			OES	78KNO 01
1.3			OES	62JOE 01
1.37			RR	73KAR 01
1.39			DCPES	73KAR 01

TABLE 1A-2: INDIVIDUAL DATA FOR NBS SRM 1A (cont.)

Conc	Uncer	Com	Method	Reference
Mn (ug/g)				
320			OES	78KNO 01
500		3	OES	63CLA 01
500		3	OES	63CLA 01
Mo (ug/g)				
<	1	L	OES	63CLA 01
Na (ug/g)				
2300			RR	73KAR 01
2700			DCPES	73KAR 01
Ni (ug/g)				
10			OES	63CLA 01
P (ug/g)				
650			WXRF	71FAB 01
1500			OES	78KNO 01
Pb (ug/g)				
17.2			FAA	75CAM 02
19.1			AA	84TER 01
20			OES	63CLA 01
21			FAA	79HEI 03
S (ug/g)				
2620			CB	84LEC 02
2700			CB	55COL 01
2800			CB	74RUN 01
2800			OES	78KNO 01
2800			UU	72BOU 01
3000			TURB	73SHA 01
3020	90		CB	77LAN 01
3073			CB	78TER 01
Sb (ng/g)				
630			HAA	84TER 04
Sc (ug/g)				
15			OES	63CLA 01

Conc	Uncer	Com	Method	Reference
Si (%)				
6.53			XRF	78KNO 01
6.54			OES	62JOE 01
6.58			RR	73KAR 01
6.63			COLOR	74SHA 01
6.72			DCPES	73KAR 01
Sn (ug/g)				
1.68			AA	82TER 01
2.58	0.1		FAA	85TER 01
Sr (ug/g)				
1700			OES	75THO 01
1940			OES	58GRA 01
2000		3	OES	63CLA 01
2000			RTNA	61TUR 01
3000		3	OES	63CLA 01
Ti (ug/g)				
900			RR	73KAR 01
900			DCPES	73KAR 01
960	61		RTNA	65WAH 01
1000			OES	78KNO 01
1500		3	OES	63CLA 01
2500		3	OES	63CLA 01
U (ug/g)				
155.75	1.86		ICPES	83NOR 01
V (ug/g)				
30			OES	63CLA 01
Y (ug/g)				
10			OES	63CLA 01
Zn (ug/g)				
17			XRF	65BAL 01
23.3			RTNA	65BAL 01
Zr (ug/g)				
60			OES	63CLA 01

TABLE 1B-1: COMPILED DATA FOR NBS SRM 1B ARGILLACEOUS LIMESTONE (revised 3/1/86)

ELE	UNITS	NBS Mean	CONSENSUS Mean ± SD (n)	RANGE	AA Mean (n)	ICPES Mean (n)	OES Mean (n)	OTHER METHODS Mean (n) Method
Ag	ug/g	---	< 5	---	---	< 5	---	---
Al	ug/g	5920	5730 (2)	5660 - 5800	---	5660 (1)	5800 (1)	---
As	ug/g	---	< 5	---	---	< 5	---	---
Au	ug/g	---	< 3	---	---	< 3	---	---
Ba	ug/g	---	86 (1)	---	---	86 (1)	---	---
Be	ng/g	---	420 (1)	---	---	420 (1)	---	---
Bi	ug/g	---	< 25	---	---	< 25	---	---
C-I	%	11.0	---	---	---	---	---	---
Ca	%	36.4	36.31 ± 0.44 (3)	35.93 - 36.8	36.2 (1)	35.93 (1)	36.8 (1)	---
Cd	ng/g	---	41 (2)	30 - 52	30 (1)	---	---	52 (1) IDMS
Ce	ug/g	---	7.81 (1)	---	---	7.81 (1)	---	---
Cl	ug/g	---	70 (1)	---	---	---	---	70 (1) XRF
Co	ug/g	---	4.1 (1)	---	---	4.1 (1)	---	---
Cr	ug/g	---	15.7 (1)	---	---	15.7 (1)	---	---
Cu	ug/g	---	5.5 (1)	---	---	5.5 (1)	---	---
Dy	ug/g	---	0.9 (1)	---	---	0.9 (1)	---	---
Er	ng/g	---	570 (1)	---	---	570 (1)	---	---
Eu	ng/g	---	240 (1)	---	---	240 (1)	---	---
F	ug/g	---	1766 (1)	---	---	---	---	1766 (1) XRF
Fe	ug/g	5240	5320 ± 280 (3)	5000 - 5500	5500 (1)	5460 (1)	5000 (1)	---
Gd	ug/g	---	0.97 (1)	---	---	0.97 (1)	---	---
Hg	ng/g	---	15.7 (1)	---	15.7 (1)	---	---	---
Ho	ng/g	---	200 (1)	---	---	200 (1)	---	---
K	ug/g	2100	2100 (2)	2000 - 2200	2200 (1)	2000 (1)	---	---
LOI	%	41.1	---	---	---	---	---	---
La	ug/g	---	6.86 (1)	---	---	6.86 (1)	---	---
Li	ug/g	---	< 2	---	---	< 2	---	---
Lu	ng/g	---	80 (1)	---	---	80 (1)	---	---
Mg	ug/g	2170	2150 ± 220 (3)	2000 - 2400	2000 (1)	2040 (1)	2400 (1)	---
Mn	ug/g	1550	1510 ± 85 (3)	1430 - 1600	1600 (1)	1510 (1)	1430 (1)	---
Mo	ug/g	---	< 3	---	---	< 3	---	---
Na	ug/g	300	330 (2)	260 - 400	400 (1)	260 (1)	---	---
Nd	ug/g	---	4.88 (1)	---	---	4.88 (1)	---	---
Ni	ug/g	---	11 (1)	---	---	11 (1)	---	---
P	ug/g	350	370 (1)	---	---	370 (1)	---	---
Pb	ug/g	---	9.5 (2)	2 - 17	2 (1)	17 (1)	---	---
Pr	ug/g	---	1.18 (1)	---	---	1.18 (1)	---	---
S	ug/g	---	146 (2)	100 - 192	---	---	---	192 (1) XRF
S	ug/g	---	---	---	---	---	---	100 (1) CB
Sb	ug/g	---	< 10	---	---	< 10	---	---
Se	ug/g	---	< 30	---	---	< 30	---	---
Si	%	2.3	2.3 (2)	2.28 - 2.32	---	---	2.32 (1)	2.28 (1) COLOR
Sm	ug/g	---	0.89 (1)	---	---	0.89 (1)	---	---
Sn	ug/g	---	< 3	---	---	< 3	---	---
Sr	ug/g	1180	1170 ± 60 (3)	1100 - 1208	1100 (1)	1208 (1)	1200 (1)	---
Th	ug/g	---	< 25	---	---	25	---	---
Ti	ug/g	280	296 (2)	292 - 300	---	292 (1)	300 (1)	---
U	ug/g	---	< 30	---	---	30	---	---
V	ug/g	---	29.45 (2)	28.8 - 30.1	---	30.1 (1)	28.8 (1)	---
Y	ug/g	---	7 (1)	---	---	7 (1)	---	---
Yb	ng/g	---	1325 (2)	550 - 2100	---	1325 (2)	---	---
Zn	ug/g	---	40.7 (1)	---	---	40.7 (1)	---	---
Zr	ug/g	---	16 (1)	---	---	16 (1)	---	---

TABLE 1B-2: INDIVIDUAL DATA FOR NBS SRM 1B (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ag (ug/g)				
< 5		L	ICPES	81CHU 01
Al (ug/g)				
5660	200		ICPES	81CHU 01
5800			OES	73BES 01
As (ug/g)				
< 5		L	ICPES	81CHU 01
Au (ug/g)				
< 3		L	ICPES	81CHU 01
Ba (ug/g)				
86	1.7		ICPES	81CHU 01
Be (ng/g)				
420	50		ICPES	81CHU 01
Bi (ug/g)				
< 25		L	ICPES	81CHU 01
Ca (%)				
35.93	1.19		ICPES	81CHU 01
36.2			AA	84SCH 01
36.8			OES	73BES 01
Cd (ng/g)				
< 2000		L	ICPES	81CHU 01
30	80		AA	83GOG 01
52			IDMS	74ROS 02
Ce (ug/g)				
< 15		L	ICPES	81CHU 01
7.81	0.48		ICPES	85JAR 02
Cl (ug/g)				
70			WXRF	82LEO 03
Co (ug/g)				
4.1	1		ICPES	81CHU 01
Cr (ug/g)				
15.7	1		ICPES	81CHU 01
Cu (ug/g)				
5.5	1		ICPES	81CHU 01
Dy (ug/g)				
0.9	0.03		ICPES	85JAR 02
Er (ng/g)				
570	20		ICPES	85JAR 02
Eu (ng/g)				
240	10		ICPES	85JAR 02
1700	1200		ICPES	81CHU 01
F (ug/g)				
1766			WXRF	82LEO 03
Fe (ug/g)				
5000			OES	73BES 01
5460	140		ICPES	81CHU 01
5500			AA	84SCH 01
Gd (ug/g)				
< 5		L	ICPES	81CHU 01
0.97	0.05		ICPES	85JAR 02
Hg (ng/g)				
15.7	0.9		FAA	82FLA 01
Ho (ng/g)				
200	10		ICPES	85JAR 02
K (ug/g)				
2000	50		ICPES	81CHU 01
2200			AA	84SCH 01
La (ug/g)				
< 5		L	ICPES	81CHU 01
6.86	0.35		ICPES	85JAR 02

TABLE 1B-2: INDIVIDUAL DATA FOR NBS SRM 1B (cont.)

Conc	Uncer	Com	Method	Reference
Li (ug/g)				
< 2		L	ICPES	81CHU 01
Lu (ng/g)				
80	10		ICPES	85JAR 02
Mg (ug/g)				
2000			AA	84SCH 01
2040	60		ICPES	81CHU 01
2400			OES	73BES 01
Mn (ug/g)				
1430			OES	73BES 01
1510	45		ICPES	81CHU 01
1600			AA	84SCH 01
Mo (ug/g)				
< 3		L	ICPES	81CHU 01
Na (ug/g)				
260	15		ICPES	81CHU 01
400			AA	84SCH 01
Nd (ug/g)				
< 20		L	ICPES	81CHU 01
4.88	0.09		ICPES	85JAR 02
Ni (ug/g)				
11	1		ICPES	81CHU 01
P (ug/g)				
370	9		ICPES	81CHU 01
Pb (ug/g)				
2	0.4		FAA	75CAM 02
17	2		ICPES	81CHU 01
Pr (ug/g)				
1.18	0.03		ICPES	85JAR 02
S (ug/g)				
100			CB	77LAN 01
192			WXRF	82LEO 03
Sb (ug/g)				
< 10		L	ICPES	81CHU 01
Se (ug/g)				
< 30		L	ICPES	81CHU 01
Si (%)				
2.28	0.05		COLOR	81FON 01
2.32			OES	73BES 01
Sm (ug/g)				
< 5		L	ICPES	81CHU 01
0.89	0.04		ICPES	85JAR 02
Sn (ug/g)				
< 3		L	ICPES	81CHU 01
Sr (ug/g)				
1100			AA	84SCH 01
1200			OES	75THO 01
1208	24		ICPES	81CHU 01
Th (ug/g)				
< 25		L	ICPES	81CHU 01
Ti (ug/g)				
292	6		ICPES	81CHU 01
300			OES	73BES 01
U (ug/g)				
< 30		L	ICPES	81CHU 01
V (ug/g)				
28.8			OES	84PLS 01
30.1	1.4		ICPES	81CHU 01

TABLE 1B-2: INDIVIDUAL DATA FOR NBS SRM 1B (cont.)

Conc	Uncer	Com	Method	Reference
Y (ug/g)				
7	0.34		ICPES	85JAR 02
Yb (ng/g)				
550	20		ICPES	85JAR 02
2100	100		ICPES	81CHU 01
Zn (ug/g)				
40.7	2		ICPES	81CHU 01
Zr (ug/g)				
16	1		ICPES	81CHU 01

TABLE 1C-1: COMPILED DATA FOR NBS SRM 1C ARGILLACEOUS LIMESTONE (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean (n)	RANGE	NAA Mean (n)	ICPES Mean (n)	OTHER METHODS Mean (n) Method
Al	ug/g	6880 ± 160	---	---	---	---	---
Ba	ug/g	---	84 (1)	---	84 (1)	---	---
Ca	%	35.96 ± 0.21	---	---	---	---	---
Cd	ng/g	---	400 (1)	---	---	400 (1)	---
Ce	ug/g	---	7.14 (2)	6.87 - 7.4	7.4 (1)	6.87 (1)	---
Co	ug/g	---	1.15 (1)	---	1.15 (1)	---	---
Cr	ug/g	---	19 (1)	---	19 (1)	---	---
Cs	ng/g	---	590 (1)	---	590 (1)	---	---
Dy	ng/g	---	640 (1)	---	---	640 (1)	---
Er	ng/g	---	410 (1)	---	---	410 (1)	---
Eu	ng/g	---	165 (2)	160 - 170	170 (1)	160 (1)	---
Fe	ug/g	3840 ± 210	3900 (1)	---	3900 (1)	---	---
Gd	ng/g	---	650 (1)	---	---	650 (1)	---
Hf	ng/g	---	750 (1)	---	750 (1)	---	---
Ho	ng/g	---	140 (1)	---	---	140 (1)	---
K	ug/g	2320 ± 80	---	---	---	---	---
LOI	%	39.9 ± 0.1	---	---	---	---	---
La	ug/g	---	4.63 (2)	4.26 - 5	5 (1)	4.26 (1)	---
Lu	ng/g	---	60 (2)	---	60 (1)	60 (1)	---
Mg	ug/g	2530 ± 240	---	---	---	---	---
Mn	ug/g	190 ± 40	---	---	---	---	---
Na	ug/g	150 ± 75	---	---	---	---	---
Nd	ug/g	---	3.72 (2)	3.7 - 3.73	3.7 (1)	3.73 (1)	---
P	ug/g	175 ± 44	165 (2)	160 - 170	---	170 (1)	160 (1) COLOR
Pr	ug/g	---	0.9 (1)	---	---	0.9 (1)	---
Rb	ug/g	---	12.5 (1)	---	12.5 (1)	---	---
Sc	ug/g	---	1.3 (1)	---	1.3 (1)	---	---
Si	%	3.19 ± 0.04	---	---	---	---	---
Sm	ng/g	---	730 (2)	---	730 (1)	730 (1)	---
Sr	ug/g	250 ± 40	---	---	---	---	---
Ta	ng/g	---	90 (1)	---	90 (1)	---	---
Tb	ng/g	---	130 (1)	---	130 (1)	---	---
Th	ug/g	---	1.02 (1)	---	1.02 (1)	---	---
Ti	ug/g	420 ± 60	---	---	---	---	---
Tm	ng/g	---	70 (1)	---	70 (1)	---	---
U	ug/g	---	1.5 (1)	---	1.5 (1)	---	---
Y	ug/g	---	5.05 (1)	---	---	5.05 (1)	---
Yb	ng/g	---	385 (2)	380 - 390	380 (1)	390 (1)	---

TABLE 1C-2: INDIVIDUAL DATA FOR NBS SRM 1C (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ba (ug/g)				
84			ITNA	85POT 02
Cd (ng/g)				
< 500			FAA	83UCH 02
400	38		ICPES	83UCH 02
Ce (ug/g)				
6.87	0.14		ICPES	85JAR 02
7.4			ITNA	85POT 02
Co (ug/g)				
1.15			ITNA	85POT 02
Cr (ug/g)				
19			ITNA	85POT 02
Cs (ng/g)				
590			ITNA	85POT 02
Dy (ng/g)				
640	10		ICPES	85JAR 02
Er (ng/g)				
410	20		ICPES	85JAR 02
Eu (ng/g)				
160			ICPES	85JAR 02
170			ITNA	85POT 02
Fe (ug/g)				
3900			ITNA	85POT 02
Gd (ng/g)				
650	10		ICPES	85JAR 02
Hf (ng/g)				
750			ITNA	85POT 02
Ho (ng/g)				
140	10		ICPES	85JAR 02
La (ug/g)				
4.26	0.1		ICPES	85JAR 02
5			ITNA	85POT 02
Lu (ng/g)				
60			ICPES	85JAR 02
60			ITNA	85POT 02
Nd (ug/g)				
3.7			ITNA	85POT 02
3.73	0.05		ICPES	85JAR 02
P (%)				
0.016	0.0002		COLOR	83UCH 01
0.017	0.0001		ICPES	83UCH 01
Pr (ug/g)				
0.9	0.02		ICPES	85JAR 02
Rb (ug/g)				
12.5			ITNA	85POT 02
Sc (ug/g)				
1.3			ITNA	85POT 02
Sm (ng/g)				
730			ITNA	85POT 02
730	20		ICPES	85JAR 02
Ta (ng/g)				
90			ITNA	85POT 02
Tb (ng/g)				
130			ITNA	85POT 02
Th (ug/g)				
1.02			ITNA	85POT 02

TABLE 1C-2: INDIVIDUAL DATA FOR NBS SRM 1C (cont.)

Conc	Uncer	Com	Method	Reference
Tm (ng/g)				
70			ITNA	85POT 02
U (ug/g)				
1.5			ITNA	85POT 02
Y (ug/g)				
5.05	0.02		ICPES	85JAR 02
Yb (ng/g)				
380			ITNA	85POT 02
390	10		ICPES	85JAR 02

TABLE 27F-1: COMPILED DATA FOR NBS SRM 27F SIBLEY IRON ORE
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean	METHOD
Al	ug/g	4340 ± 160	---	---
Bi	ng/g	---	150 (1)	AA
Ca	ug/g	280 ± 20	---	---
Fe	%	65.97 ± 0.05	---	---
K	ug/g	66 ± 17	---	---
Mg	ug/g	115 ± 25	---	---
Mn	ug/g	85 ± 15	---	---
Na	ug/g	89 ± 22	---	---
P	ug/g	410 ± 10	---	---
S	ug/g	50 ± 10	---	---
Si	%	1.95 ± 0.02	---	---
Ti	ug/g	110 ± 11	---	---

TABLE 27F-2: INDIVIDUAL DATA FOR NBS SRM 27F
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Bi (ng/g)				
150			FAA	84TER 03

TABLE 28-1: COMPILED DATA FOR NBS SRM 28 NORRIE IRON ORE
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean	METHOD
Mn	ug/g	4400	---	---

TABLE 56-1: COMPILED DATA FOR NBS SRM 56 PHOSPHATE ROCK
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean	METHOD
Al	%	1.62	---	---
Ca	%	32	---	---
Fe	%	2.31	---	---
P	%	13.66	---	---
S	%	---	2.5 (1)	TURB

TABLE 56-2: INDIVIDUAL DATA FOR NBS SRM 56
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
S (%)				
2.5			TURB	73SHA 01

TABLE 56B-1: COMPILED DATA FOR NBS SRM 56B PHOSPHATE ROCK
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean	METHOD
Ca	%	31.5	---	---
F	%	3.4	3.32 (2)	ISE
P	%	13.76	---	---
Si	%	4.72	4.8 (1)	AA

TABLE 56B-2: INDIVIDUAL DATA FOR NBS SRM 56B
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
F (%)				
3.25		11	ISE	71PET 01
3.38		11	ISE	71PET 01
Si (%)				
4.8	0.05		AA	82KIS 01

TABLE 69A-1: COMPILED DATA FOR NBS SRM 69A BAUXITE ORE (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		XRF		OTHER METHODS		
		Mean	Mean ± SD	(n)			Mean	(n)	Mean ± SD	(n)	Mean	(n)	Method
Al	%	29.1	29.5 ± 0.4	(7)	29.2	29.17 - 30.20	29.2	(2)	29.68 ± 0.41	(4)	29.17	(1)	TITR
As	ug/g	---	12.4	(2)	---	12.2 - 12.7	12.7	(1)	12.2	(1)	---		
Ba	ug/g	90	73	(1)	---	---	---		73	(1)	---		
Be	ng/g	---	200	(1)	---	---	200	(1)	---		---		
Bi	ng/g	---	668	(1)	---	---	668	(1)	---		---		
Ca	ug/g	2100	1980 ± 80	(5)	1900	1900 - 2100	1900	(1)	2000	(1)	1900	(1)	OES
Ca	ug/g	---	---		---	---	---		---		2050	(2)	TITR
Cd	ng/g	---	20	(1)	---	---	20	(1)	---		---		
Ce	ug/g	---	94	(1)	---	---	---		94	(1)	---		
Cl	ug/g	---	117	(1)	---	---	---		117	(1)	---		
Co	ug/g	---	3.5	(1)	---	---	---		3.5	(1)	---		
Cr	ug/g	340	270	(1)	---	---	---		---		270	(1)	OES
Cu	ug/g	---	9	(1)	---	---	---		9	(1)	---		
Dy	ug/g	---	4.5	(1)	---	---	---		4.5	(1)	---		
F	ug/g	---	1490	(1)	---	---	---		1490	(1)	---		
Fe	%	4.07	3.99 ± 0.12	(6)	3.9	3.82 - 4.12	3.96	(1)	3.93 ± 0.14	(3)	4.12	(1)	OES
Fe	%	---	---		---	---	---		---		4.07	(1)	TITR
Ga	ug/g	---	119	(1)	---	---	---		119	(1)	---		
Gd	ug/g	---	3.2	(1)	---	---	---		3.2	(1)	---		
Hf	ug/g	---	33	(1)	---	---	---		33	(1)	---		
K	ug/g	< 80	75	(2)	---	70 - 80	---		75	(2)	---		
LOI	%	29.55	---		---	---	---		---		---		
La	ug/g	---	71	(1)	---	---	---		71	(1)	---		
Mg	ug/g	120	75	(2)	---	60 - 90	90	(1)	---		60	(1)	OES
Mn	ug/g	< 80	23	(1)	---	---	---		23	(1)	---		
Na	ug/g	< 80	---		---	---	---		---		---		
Nb	ug/g	---	59	(1)	---	---	---		59	(1)	---		
Nd	ug/g	---	28	(1)	---	---	---		28	(1)	---		
P	ug/g	350	510	(2)	---	220 - 800	---		220	(1)	800	(1)	OES
Pb	ug/g	---	34	(2)	---	31 - 37	30.8	(1)	37	(1)	---		
Pr	ug/g	---	5.4	(1)	---	---	---		5.4	(1)	---		
S	ug/g	160	300 ± 80	(4)	300	200 - 400	---		358	(2)	200	(1)	OES
S	ug/g	---	---		---	---	---		---		300	(1)	TURB
Sb	ug/g	---	2.0	(2)	---	1.0 - 3.1	1.0	(1)	3.1	(1)	---		
Sc	ug/g	---	8.9	(1)	---	---	---		8.9	(1)	---		
Si	%	2.81	2.82 ± 0.03	(5)	2.8	2.78 - 2.85	2.85	(2)	2.8 ± 0.02	(3)	---		
Sm	ug/g	---	5.1	(1)	---	---	---		5.1	(1)	---		
Sn	ug/g	---	8.2	(2)	---	8.0 - 8.5	8.51	(1)	8	(1)	---		
Sr	ug/g	---	49	(1)	---	---	---		49	(1)	---		
Th	ug/g	---	94	(1)	---	---	---		94	(1)	---		
Ti	%	1.66	1.62 ± 0.11	(7)	1.64	1.46 - 1.74	1.46	(2)	1.68 ± 0.04	(4)	1.7	(1)	OES
U	ug/g	---	6.2	(1)	---	---	---		6.2	(1)	---		
V	ug/g	170	---		---	---	---		---		---		
Y	ug/g	---	16	(1)	---	---	---		16	(1)	---		
Zn	ug/g	---	11	(1)	---	---	---		11	(1)	---		
Zr	ug/g	1330	1285	(1)	---	---	---		1285	(1)	---		

TABLE 69A-2: INDIVIDUAL DATA FOR NBS SRM 69A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (%)				
29.17			TITR	58WAT 01
29.2			XRF	78KNO 01
29.2	1.04		AA	79BRE 02
29.2	1.04		AA	80LAB 03
29.64			XRF	79SCH 02
29.68	0.07		XRF	80LAB 03
30.2			EXRF	80DAL 01
As (ug/g)				
12.2			XRF	76LEO 02
12.7			HAA	84TER 04
Ba (ug/g)				
73			XRF	76LEO 02
Be (ng/g)				
200			AA	82TER 02
200		D	AA	83TER 01
Bi (ng/g)				
668			HAA	84TER 02
668		D	FAA	84TER 03
Ca (ug/g)				
1100		11	AA	79MEN 01
1900		11	AA	79MEN 01
1900			OES	78KNO 01
2000			TITR	80HIT 02
2000			EXRF	80DAL 01
2100			TITR	79MEN 01
Cd (ng/g)				
20			AA	84TER 01
Ce (ug/g)				
94			XRF	76LEO 02
Cl (ug/g)				
117			WXRF	82LEO 03
Co (ug/g)				
3.5			XRF	76LEO 02
Cr (ug/g)				
270			OES	78KNO 01
Cu (ug/g)				
9			XRF	76LEO 02
Dy (ug/g)				
4.5			XRF	76LEO 02
F (ug/g)				
1490			WXRF	82LEO 03
Fe (%)				
3.82	0.08		XRF	80LAB 03
3.88			XRF	79SCH 02
3.96	0.03		AA	80LAB 03
4.07			TITR	69WIC 01
4.09			EXRF	80DAL 01
4.12			OES	78KNO 01
Ga (ug/g)				
119			XRF	76LEO 02
Gd (ug/g)				
3.2			XRF	76LEO 02
Hf (ug/g)				
33			XRF	76LEO 02
K (ug/g)				
70			EXRF	80DAL 01
80			XRF	78KNO 01
La (ug/g)				
71			XRF	76LEO 02
Mg (ug/g)				
60			OES	78KNO 01
90			AA	79MEN 01

TABLE 69A-2: INDIVIDUAL DATA FOR NBS SRM 69A (cont.)

Conc	Uncer	Com	Method	Reference
Mn (ug/g)				
< 100		L	OES	78KNO 01
23			EXRF	80DAL 01
Nb (ug/g)				
59			XRF	76LEO 02
Nd (ug/g)				
28			XRF	76LEO 02
P (ug/g)				
220			EXRF	80DAL 01
800			OES	78KNO 01
Pb (ug/g)				
30.8			AA	84TER 01
37			XRF	76LEO 02
Pr (ug/g)				
5.4			XRF	76LEO 02
S (ug/g)				
200			OES	78KNO 01
300			TURB	73SHA 01
317			WXRF	82LEO 03
400			EXRF	80DAL 01
Sb (ug/g)				
1			HAA	84TER 04
3.1			XRF	76LEO 02
Sc (ug/g)				
8.9			XRF	76LEO 02
Si (%)				
2.44			EXRF	80DAL 01
2.78			XRF	78KNO 01
2.8			XRF	79SCH 02
2.82	0.04		XRF	80LAB 03
2.85	0.08		AA	80LAB 03
2.85	0.08		AA	79BRE 02

Conc	Uncer	Com	Method	Reference
Sm (ug/g)				
5.1			XRF	76LEO 02
Sn (ug/g)				
8			XRF	76LEO 02
8.51	0.4		FAA	85TER 01
Sr (ug/g)				
49			XRF	76LEO 02
Th (ug/g)				
94			XRF	76LEO 02
Ti (%)				
1.32	0.11		COLOR	79BRE 01
1.46	0.14		AA	79BRE 01
1.46	0.14		AA	80LAB 03
1.64	0.02		XRF	80LAB 03
1.66			XRF	79SCH 02
1.66	0.01		XRF	79BRE 01
1.7			OES	78KNO 01
1.74			EXRF	80DAL 01
U (ug/g)				
6.2			XRF	76LEO 02
Y (ug/g)				
16			XRF	76LEO 02
Zn (ug/g)				
11			XRF	76LEO 02
Zr (ug/g)				
1285			XRF	76LEO 02

TABLE 69B-1: COMPILED DATA FOR NBS SRM 69B BAUXITE ORE
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD
Al	%	25.8 ± 0.1
Ba	ug/g	72
Ca	ug/g	.930 ± 140
Ce	ug/g	240
Co	ug/g	1
Cr	ug/g	75 ± 14
Fe	%	4.99 ± 0.08
Hf	ug/g	63
K	ug/g	560 ± 75
LOI	%	27.2 ± 0.2
Mg	ug/g	510 ± 50
Mn	ug/g	850 ± 40
Na	ug/g	180
P	ug/g	514 ± 17
S	ug/g	2500 ± 80
Sc	ug/g	8
Si	%	6.27 ± 0.05
Ti	%	1.14 ± 0.03
V	ug/g	160 ± 20
Zn	ug/g	28 ± 4
Zr	ug/g	2150 ± 520

TABLE 70-1: COMPILED DATA FOR NBS SRM 70 POTASH FELDSPAR (revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean ± SD	(n)	MEDIAN	RANGE	METHOD
Al	%	9.54	---		---	---	---
Ba	ug/g	300	380	(1)	---	---	NAA
Ca	ug/g	500	---		---	---	---
Ce	ug/g	---	< 4		---	---	NAA
Co	ng/g	---	100	(1)	---	---	NAA
Cr	ug/g	---	< 2		---	---	NAA
Cs	ug/g	---	6.6	(1)	---	---	NAA
Eu	ng/g	---	400	(1)	---	---	NAA
Fe	ug/g	210	300	(1)	---	---	NAA
Hf	ng/g	---	< 200		---	---	NAA
Hg	ng/g	---	98	(1)	---	---	AA
K	%	10.44	---		---	---	---
LOI	%	0.22	---		---	---	---
La	ug/g	---	< 3		---	---	NAA
Lu	ng/g	---	< 40		---	---	NAA
Mg	ug/g	78	---		---	---	---
Mn	ug/g	7	---		---	---	---
Na	%	1.76	---		---	---	---
Nd	ug/g	---	< 3		---	---	NAA
P	ug/g	52	---		---	---	---
Rb	ug/g	---	470	(1)	---	---	NAA
Sb	ng/g	---	< 500		---	---	NAA
Sc	ng/g	---	40	(1)	---	---	NAA
Si	%	31.13	---		---	---	---
Sm	ng/g	---	< 500		---	---	NAA
Ta	ng/g	---	< 200		---	---	NAA
Tb	ng/g	---	< 200		---	---	NAA
Th	ng/g	---	< 400		---	---	NAA
Ti	ug/g	12	---		---	---	---
Yb	ng/g	---	< 300		---	---	NAA
Zn	ug/g	---	6.9 ± 0.8	(3)	7.3	6.0 - 7.5	NAA/XRF
Zr	ug/g	---	< 75		---	---	NAA

TABLE 70-2: INDIVIDUAL DATA FOR NBS SRM 70 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ba (ug/g)				
380	17		ITNA	77FLA 01
Ce (ug/g)				
<	4	L	ITNA	77FLA 01
Co (ng/g)				
100			ITNA	77FLA 01
Cr (ug/g)				
<	2	L	ITNA	77FLA 01
Cs (ug/g)				
6.6	0.19		ITNA	77FLA 01
Eu (ng/g)				
400	10		ITNA	77FLA 01
Fe (ug/g)				
300			ITNA	77FLA 01
Hf (ng/g)				
<	200	L	ITNA	77FLA 01
Hg (ng/g)				
98	5.95		FAA	82FLA 01
La (ug/g)				
<	3	L	ITNA	77FLA 01
Lu (ng/g)				
<	40	L	ITNA	77FLA 01
Nd (ug/g)				
<	3	L	ITNA	77FLA 01
Rb (ug/g)				
470	26		ITNA	77FLA 01
Sb (ng/g)				
<	500	L	ITNA	77FLA 01
Sc (ng/g)				
40	3		ITNA	77FLA 01
Sm (ng/g)				
<	500	L	ITNA	77FLA 01
Ta (ng/g)				
<	200	L	ITNA	77FLA 01
Tb (ng/g)				
<	200	L	ITNA	77FLA 01
Th (ng/g)				
<	400	L	ITNA	77FLA 01
Yb (ng/g)				
<	300	L	ITNA	77FLA 01
Zn (ug/g)				
6	0.71		ITNA	77FLA 01
7.3			RTNA	65BAL 01
7.5			XRF	65BAL 01
Zr (ug/g)				
<	75	L	ITNA	77FLA 01

TABLE 70A-1: COMPILED DATA FOR NBS SRM 70A POTASH FELDSPAR (revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	AA Mean (n)	NAA Mean (n)	OTHER METHODS Mean ± SD (n) Method
Al	%	9.47	---	---	---	---	---	---
Ba	ug/g	180	121 (2)	---	120 - 122	---	120 (1)	121.9 (1) IDMS
Be	ng/g	---	640 (1)	---	---	640 (1)	---	---
Bi	ng/g	---	68 (1)	---	---	68 (1)	---	---
C	ug/g	---	50 (1)	---	---	---	---	50 (1) CB
Ca	ug/g	790	770 (2)	---	640 - 900	770 (2)	---	---
Cd	ng/g	---	8.7 (1)	---	---	---	---	8.7 (1) IDMS
Ce	ug/g	---	< 4	---	---	---	< 4	---
Co	ng/g	---	200 (1)	---	---	---	200 (1)	---
Cr	ug/g	---	< 4	---	---	---	< 4	---
Cs	ug/g	---	9.64 (2)	---	9.28 - 10	10 (1)	9.28 (1)	---
Eu	ng/g	---	570 (1)	---	---	---	570 (1)	---
Fe	ug/g	520	600 ± 100 (3)	600	490 - 700	595 (2)	600 (1)	---
Hf	ng/g	---	< 300	---	---	---	< 300	---
Hg	ng/g	---	15 (1)	---	---	15 (1)	---	---
K	%	9.79	9.76 ± 0.07 (4)	9.71	9.71 - 9.85	9.82 (2)	---	9.71 (1) ISE
K	%	---	---	---	---	---	---	9.71 (1) FE
LOI	%	0.4	---	---	---	---	---	---
La	ug/g	---	< 2	---	---	---	< 2	---
Lu	ng/g	---	8.0 (1)	---	---	---	---	8.0 (1) IDMS
Na	%	1.87	1.86 ± 0.04 (5)	1.87	1.8 - 1.9	1.87 (2)	---	1.85 (1) XRF
Na	%	---	---	---	---	---	---	1.9 (1) FE
Na	%	---	---	---	---	---	---	1.8 (1) ISE
Nd	ug/g	---	< 3	---	---	---	< 3	---
Rb	ug/g	550	525 ± 9 (9)	524.2	507 - 540	540 (1)	530 (1)	519 (2) XRF
Rb	ug/g	---	---	---	---	---	---	524 ± 4 (4) IDMS
Rb	ug/g	---	---	---	---	---	---	520.4 (1) MS
S	ug/g	---	3.0 (1)	---	---	---	---	3.0 (1) CB
Sb	ng/g	---	< 400	---	---	---	< 400	---
Sc	ng/g	---	110 (1)	---	---	---	110 (1)	---
Se	ug/g	---	66.1 (1)	---	---	---	---	66.1 (1) XRF
Si	%	31.3	---	---	---	---	---	---
Sm	ng/g	---	< 200	---	---	---	< 200	---
Sn	ug/g	---	0.75 (1)	---	---	0.75 (1)	---	---
Sr	ug/g	---	64.7 ± 1.4 (6)	64.8	62.4 - 66.4	---	---	62.43 (1) XRF
Sr	ug/g	---	---	---	---	---	---	64.8 (1) MS
Sr	ug/g	---	---	---	---	---	---	65.2 ± 1.0 (4) IDMS
Sr-87/86	ratio	---	1.2002 ± 0.0024 (3)	1.2002	1.1978 - 1.2025	---	---	1.2002 (1) MS
Sr-87/86	ratio	---	---	---	---	---	---	1.2002 (2) IDMS
Ta	ng/g	---	150 (1)	---	---	---	150 (1)	---
Tb	ng/g	---	< 200	---	---	---	< 200	---
Th	ng/g	---	300 (1)	---	---	---	300 (1)	---
Ti	ug/g	60	---	---	---	---	---	---
Tl	ug/g	---	2.81 (2)	---	2.72 - 2.91	---	---	2.81 (2) ASV
Yb	ng/g	---	< 500	---	---	---	< 500	---
Zn	ug/g	---	< 5	---	---	---	< 5	---
Zr	ug/g	---	< 90	---	---	---	< 90	---

TABLE 70A-2: INDIVIDUAL DATA FOR NBS SRM 70A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ba (ug/g)				
120	5		ITNA	77FLA 01
121.9			IDMS	69LAE 01
Be (ng/g)				
640			AA	83TER 01
Bi (ng/g)				
68			FAA	84TER 03
C (ug/g)				
50			CB	78TER 01
Ca (ug/g)				
640			AA	73RAM 01
900			AA	84SCH 01
Cd (ng/g)				
8.7			IDMS	74ROS 02
Ce (ug/g)				
<	4	L	ITNA	77FLA 01
Co (ng/g)				
200			ITNA	77FLA 01
Cr (ug/g)				
<	4	L	ITNA	77FLA 01
Cs (ug/g)				
9.28	0.15		ITNA	77FLA 01
10			AA	72ALL 01
Eu (ng/g)				
570	10		ITNA	77FLA 01
Fe (ug/g)				
490			AA	73RAM 01
600			ITNA	77FLA 01
700			AA	84SCH 01
Hf (ng/g)				
<	300	L	ITNA	77FLA 01
Hg (ng/g)				
15	1.03		FAA	82FLA 01
K (%)				
9.71			FE	75PUF 01
9.71			ISE	75PUF 01
9.79			AA	73RAM 01
9.85			AA	84SCH 01
La (ug/g)				
<	2	L	ITNA	77FLA 01
Lu (ng/g)				
<	100	L	ITNA	77FLA 01
8			IDMS	76MCC 03
Na (%)				
1.8			ISE	75PUF 01
1.85			WXRF	83BAL 01
1.87			AA	84SCH 01
1.87			AA	73RAM 01
1.9			FE	75PUF 01
Nd (ug/g)				
<	3	L	ITNA	77FLA 01
Rb (ug/g)				
507.4			WXRF	83VAL 01
519.1			IDMS	82KRA 01
520.4			MS	84ZIC 01
523.4			IDMS	70LAE 01
524.2	1.5		IDMS	74COR 01
529.8	1.6		IDMS	69COM 01
529.9	1		XRF	69COM 01
530	15		ITNA	77FLA 01
540			AA	72ALL 01
S (ug/g)				
3			CB	78TER 01

TABLE 70A-2: INDIVIDUAL DATA FOR NBS SRM 70A (cont.)

Conc	Uncer	Com	Method	Reference
Sb (ng/g)				
< 400		L	ITNA	77FLA 01
Sc (ng/g)				
110	3		ITNA	77FLA 01
Se (ug/g)				
66.1	0.2		XRF	69COM 01
Sm (ng/g)				
< 200		L	ITNA	77FLA 01
Sn (ug/g)				
0.75			AA	82TER 01
Sr (ug/g)				
62.43			WXRF	83VAL 01
64	0.4		IDMS	74COR 01
64.8			MS	84ZIC 01
65.1	0.1		IDMS	69COM 01
65.5			IDMS	82KRA 01
66.4			IDMS	70LAE 01
Sr-87/86 (ratio)				
1.1978	0.0033		IDMS	74COR 01
1.2002			MS	84ZIC 01
1.2025	0.0012		IDMS	69COM 01
Ta (ng/g)				
150	8		ITNA	77FLA 01
Tb (ng/g)				
< 200		L	ITNA	77FLA 01
Th (ng/g)				
300			ITNA	77FLA 01
Tl (ug/g)				
2.715	0.217	7	ASV	82CAL 01
2.906	0.25	7	ASV	82CAL 01
Yb (ng/g)				
< 500		L	ITNA	77FLA 01
Zn (ug/g)				
< 5		L	ITNA	77FLA 01
Zr (ug/g)				
< 90		L	ITNA	77FLA 01

TABLE 76-1: COMPILED DATA FOR NBS SRM 76 BURNT REFRACTORY (revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean (n)	RANGE	XRF Mean (n)	OTHER METHODS Mean (n) Method
Al	%	19.93	20.05 (1)	---	20.05 (1)	---
Ca	ug/g	1930	1600 (1)	---	1600 (1)	---
Fe	%	1.66	1.53 (2)	1.47 - 1.59	1.59 (1)	1.47 (1) COLOR
K	%	1.28	1.29 (1)	---	1.29 (1)	---
LOI	%	0.22	---	---	---	---
Li	ug/g	510	---	---	---	---
Mg	ug/g	3500	2800 (1)	---	2800 (1)	---
Mn	ug/g	---	230 (1)	---	230 (1)	---
Na	ug/g	1100	---	---	---	---
P	ug/g	300	---	---	---	---
Si	%	25.53	25.76 (1)	---	25.76 (1)	---
Sr	ug/g	---	85 (1)	---	85 (1)	---
Ti	%	1.32	1.34 (1)	---	1.34 (1)	---
V	ug/g	120	---	---	---	---
Zr	ug/g	520	---	---	---	---

TABLE 77-1: COMPILED DATA FOR NBS SRM 77 BURNT REFRACTORY (revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean (n)	RANGE	XRF Mean (n)	OTHER METHODS Mean (n) Method
Al	%	27.73	31.02 (2)	30.63 - 31.4	31.02 (2)	---
Ca	ug/g	1860	1400 (1)	---	1400 (1)	---
Fe	ug/g	6290	5450 (2)	5200 - 5700	5200 (1)	5700 (1) COLOR
K	%	1.75	1.79 (1)	---	1.79 (1)	---
LOI	%	0.21	---	---	---	---
Li	ug/g	1630	---	---	---	---
Mg	ug/g	3000	2200 (1)	---	2200 (1)	---
Mn	ug/g	---	80 (1)	---	80 (1)	---
Na	ug/g	440	---	---	---	---
P	ug/g	1960	---	---	---	---
Si	%	15.12	15.32 (2)	15.3 - 15.34	15.32 (2)	---
Sr	ug/g	---	1200 (1)	---	1200 (1)	---
Ti	%	1.76	1.82 (1)	---	1.82 (1)	---
V	ug/g	180	---	---	---	---
Zr	ug/g	670	---	---	---	---

TABLE 78-1: COMPILED DATA FOR NBS SRM 78 BURNT REFRACTORY (revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean (n)	RANGE	XRF Mean (n)	OTHER METHODS Mean (n) Method
Al	%	---	36.84 (1)	---	---	36.84 (1) TITR
Fe	ug/g	---	5000 (1)	---	---	5000 (1) COLOR
Li	ug/g	930	---	---	---	---
Na	ug/g	440	---	---	---	---

TABLE 76-2: INDIVIDUAL DATA FOR NBS SRM 76
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (%)				
20.05			WXRF	67KOD 01
Ca (ug/g)				
1600			WXRF	67KOD 01
Fe (%)				
1.47	0.01		COLOR	59COL 01
1.59			WXRF	67KOD 01
K (%)				
1.29			WXRF	67KOD 01
Mg (ug/g)				
2800			WXRF	67KOD 01
Mn (ug/g)				
230			WXRF	67KOD 01
Si (%)				
25.76			WXRF	67KOD 01
Sr (ug/g)				
85			WXRF	67KOD 01
Ti (%)				
1.34			WXRF	67KOD 01

TABLE 77-2: INDIVIDUAL DATA FOR NBS SRM 77
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (%)				
30.63			WXRF	67KOD 01
31.4			XRF	72ASH 01
Ca (ug/g)				
1400			WXRF	67KOD 01
Fe (ug/g)				
5200			WXRF	67KOD 01
5700	100		COLOR	59COL 01
K (%)				
1.79			WXRF	67KOD 01
Mg (ug/g)				
2200			WXRF	67KOD 01
Mn (ug/g)				
80			WXRF	67KOD 01
Si (%)				
15.3			XRF	72ASH 01
15.34			WXRF	67KOD 01
Sr (ug/g)				
1200			WXRF	67KOD 01
Ti (%)				
1.82			WXRF	67KOD 01

TABLE 78-2: INDIVIDUAL DATA FOR NBS SRM 78 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (%)				
36.84			TITR	58WAT 01
Fe (ug/g)				
5000	100		COLOR	59COL 01

TABLE 76A-1: COMPILED DATA FOR NBS SRMs 76A-78A BURNT REFRACTORIES
(revised 3/1/86)

ELEMENT	UNITS	76A	77A	78A
Al	%	20.47	31.84	37.92
Ca	ug/g	1570	360	790
Fe	%	1.12	0.699	0.840
K	%	1.10	0.075	1.01
LOI	%	0.34	0.22	0.42
Li	ug/g	200	120	560
Mg	ug/g	3140	2290	4220
Na	ug/g	520	275	580
P	ug/g	520	400	5700
Si	%	25.63	16.34	9.06
Sr	ug/g	310	75	2120
Ti	%	1.22	1.59	1.93

TABLE 79A-1: COMPILED DATA FOR NBS SRM 79A FLUORSPAR
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean	METHOD
Ca	%	49.99 ± 0.03	---	---
CaF2	%	97.39 ± 0.06	---	---
F	%	47.40 ± 0.03	---	---
Si	ug/g	3130	---	---
U	ng/g	---	210 (1)	NAA

TABLE 80-1: COMPILED DATA FOR NBS SRM 80 SODA-LIME GLASS
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean	METHOD
Al	ug/g	1750	---	---
As	ug/g	690	---	---
As(III)	ug/g	230	---	---
As(V)	ug/g	460	---	---
Ca	%	3.32	3.2 (1)	TITR
Cl	ug/g	470	---	---
Fe	ug/g	450	---	---
K	ug/g	330	---	---
LOI	%	0.3	---	---
Mg	%	1.95	1.93 (1)	TITR
Mn	ug/g	23	---	---
Na	%	12.35	---	---
S	ug/g	1640	---	---
Si	%	34.6	---	---
Ti	ug/g	120	---	---
Zr	ug/g	22	---	---

TABLE 79A-2: INDIVIDUAL DATA FOR NBS SRM 79A
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
U (ng/g)				
210	30		DNA	86GAU 01

TABLE 80-2: INDIVIDUAL DATA FOR NBS SRM 80
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ca (%)				
3.2			TITR	80HIT 02
Mg (%)				
1.93			TITR	80HIT 02

TABLE 88-1: COMPILED DATA FOR NBS SRM 88 DOLOMITIC LIMESTONE (revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	OTHER METHODS Mean ± SD (n) method
Al	ug/g	350	---	---	---	---
C-Inorg	%	12.9	12.93 ± 0.06 (3)	12.90	12.90 - 13.00	12.93 ± 0.06 (3) COUL
C-Org	ug/g	800	---	---	---	---
Ca	%	21.8	21.81 (1)	---	---	21.81 (1) TITR
Co	ug/g	---	0.7 (1)	---	---	0.7 (1) NAA
Cr	ug/g	---	3.9 (1)	---	---	3.9 (1) NAA
Fe	ug/g	590	580 (1)	---	---	580 (1) COLOR
H	ug/g	80	---	---	---	---
K	ug/g	250	---	---	---	---
LOI	%	47.52	---	---	---	---
Mg	%	12.95	---	---	---	---
Mn	ug/g	50	---	---	---	---
Na	ug/g	590	---	---	---	---
P	ug/g	13	---	---	---	---
S	ug/g	130	287 ± 15 (3)	290	270 - 300	300 (1) TURB
S	ug/g	---	---	---	---	280 (2) CB
Si	ug/g	1450	---	---	---	---
Sr	ug/g	< 85	57.5 (2)	---	55 - 60	60 (1) NAA
Sr	ug/g	---	---	---	---	55 (1) OES
Ti	ug/g	30	182 (2)	---	24 - 340	24 (1) NAA
Ti	ug/g	---	---	---	---	340 (1) COLOR

TABLE 88B-1: COMPILED DATA FOR NBS SRM 88B DOLOMITIC LIMESTONE
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD
Al	ug/g	1778 ± 69
C-Inorg	%	12.66 ± 0.03
Ca	%	21.53 ± 0.36
Fe	ug/g	1937 ± 14
H2O-	%	0.24
K	ug/g	855 ± 20
LOI	%	46.98
Mg	%	12.68 ± 0.04
Mn	ug/g	124 ± 9
Na	ug/g	215 ± 5
P	ug/g	19 ± 1
Si	ug/g	5282 ± 93
Sr	ug/g	64 ± 3
Ti	ug/g	96

TABLE 88-2: INDIVIDUAL DATA FOR NBS SRM 88 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
C-Inorg (%)				
12.9	0.42	41	COUL	86CAH 01
12.9047	0.0109	41	COUL	85ENG 01
13.0003	0.1556	41	COUL	85ENG 01
Ca (%)				
21.81	0.03		TITR	80HIT 02
Co (ug/g)				
0.7	0.6		RTNA	61TUR 01
Cr (ug/g)				
3.9			RTNA	61TUR 01
Fe (ug/g)				
580	10		COLOR	59COL 01
S (ug/g)				
270			CB	55COL 01
290			CB	77LAN 01
300			TURB	73SHA 01
Sr (ug/g)				
55			OES	58GRA 01
60			RTNA	61TUR 01
Ti (ug/g)				
24	4		RTNA	65WAH 01
340			COLOR	63KOR 01

TABLE 88A-1: COMPILED DATA FOR NBS SRM 88A DOLOMITIC LIMESTONE (revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	NAA Mean (n)	ICPES Mean (n)	XRF Mean (n)	OTHER METHODS Mean (n) method
Ag	ug/g	---	< 3	---	---	---	< 3	---	---
Al	ug/g	1000	600 (2)	---	300 - 900	---	900 (1)	300 (1)	---
As	ug/g	---	< 5	---	---	---	< 5	---	---
Au	ug/g	---	< 3	---	---	---	< 3	---	---
Ba	ug/g	---	18 ± 8 (3)	14	13 - 28	14 (1)	13 (1)	28 (1)	---
Be	ng/g	---	180 (1)	---	---	---	180 (1)	---	---
Bi	ug/g	---	< 25	---	---	---	< 25	---	---
C-Inorg	%	12.72	12.79 (2)	---	12.75 - 12.83	---	---	---	12.79 (2) CB
Ca	%	21.56	21.73 (2)	---	20.96 - 22.5	---	20.96 (1)	22.5 (1)	---
Cd	ug/g	---	< 2	---	---	---	< 2	---	---
Ce	ug/g	---	3.3 ± 1.3 (3)	2.7	2.46 - 4.8	2.7 (1)	2.46 (1)	4.8 (1)	---
Cl	ug/g	---	113 (1)	---	---	---	---	113 (1)	---
Co	ug/g	---	2.3 ± 1.6 (3)	3	0.5 - 3.4	0.5 (1)	3 (1)	3.4 (1)	---
Cr	ug/g	---	6.95 (2)	---	2.2 - 11.7	2.2 (1)	11.7 (1)	---	---
Cu	ug/g	---	6.95 (2)	---	2.5 - 11.4	---	2.5 (1)	11.4 (1)	---
Dy	ng/g	---	270 (1)	---	---	---	270 (1)	---	---
Er	ng/g	---	180 (1)	---	---	---	180 (1)	---	---
Eu	ng/g	---	450 ± 650 (3)	620	70 - 1200	70 (1)	635 (2)	---	---
F	ug/g	---	500 (1)	---	---	---	---	500 (1)	---
Fe	ug/g	1960	2090 ± 90 (3)	2050	2030 - 2200	2030 (1)	2050 (1)	2200 (1)	---
Gd	ug/g	---	1.86 (2)	---	0.32 - 3.4	---	1.86 (2)	---	---
Hf	ng/g	---	180 (1)	---	---	180 (1)	---	---	---
Hg	ng/g	---	28.2 (1)	---	---	---	---	---	28.2 (1) AA
Ho	ng/g	---	60 (1)	---	---	---	60 (1)	---	---
K	ug/g	1000	850 (2)	---	700 - 1000	---	1000 (1)	700 (1)	---
LOI	%	46.7	---	---	---	---	---	---	---
La	ug/g	---	1.7 ± 0.4 (3)	1.6	1.44 - 2.2	1.6 (1)	1.44 (1)	2.2 (1)	---
Li	ug/g	---	< 2	---	---	---	< 2	---	---
Lu	ng/g	---	30 (2)	---	30 - 30	30 (1)	30 (1)	---	---

TABLE 88A-1: COMPILED DATA FOR NBS SRM 88A: Dolomitic Limestone (cont.)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	NAA Mean (n)	ICPES Mean (n)	XRF Mean (n)	OTHER METHODS Mean (n) method
Mg	%	12.84	13.03 (2)	---	13 - 13.06	---	13.06 (1)	13 (1)	---
Mn	ug/g	230	180 (2)	---	150 - 210	---	210 (1)	150 (1)	---
Mo	ug/g	---	< 3	---	---	---	< 3	---	---
Na	ug/g	74	127 (2)	---	104 - 150	150 (1)	104 (1)	---	---
Nd	ug/g	---	1.33 (2)	---	1.26 - 1.4	1.4 (1)	1.26 (1)	---	---
Ni	ug/g	---	< 3	---	---	---	< 3	---	---
P	ug/g	44	145 (2)	---	70 - 220	---	70 (1)	220 (1)	---
Pb	ug/g	---	15 (2)	---	3 - 27	---	27 (1)	3 (1)	---
Pr	ng/g	---	310 (1)	---	---	---	310 (1)	---	---
Rb	ug/g	---	2 (1)	---	---	2 (1)	---	---	---
S	ug/g	---	34 ± 39 (3)	71.7	4 - 78	---	---	78 (1)	12.5 (2) CB
Sb	ug/g	---	< 10	---	---	---	< 10	---	---
Sc	ng/g	---	300 (1)	---	---	300 (1)	---	---	---
Se	ug/g	---	< 30	---	---	---	< 30	---	---
Si	ug/g	5600	4100 (1)	---	---	---	---	4100 (1)	---
Sm	ng/g	---	290 (2)	---	280 - 300	300 (1)	280 (1)	---	---
Sn	ug/g	---	2.1 (1)	---	---	---	---	2.1 (1)	---
Sr	ug/g	85	59 ± 32 (3)	41	41 - 96	---	41 (1)	41 (1)	96 (1) OES
Ta	ng/g	---	30 (1)	---	---	30 (1)	---	---	---
Tb	ng/g	---	50 (1)	---	---	50 (1)	---	---	---
Th	ng/g	---	190 (1)	---	---	190 (1)	---	---	---
Ti	ug/g	120	123 (2)	---	66 - 180	---	66 (1)	180 (1)	---
U	ng/g	---	300 (1)	---	---	300 (1)	---	---	---
V	ug/g	---	5.6 (2)	---	2.2 - 9	---	9 (1)	---	2.2 (1) OES
Y	ug/g	---	2.23 (2)	---	2.16 - 2.3	---	2.16 (1)	2.3 (1)	---
Yb	ng/g	---	510 ± 600 (3)	170	150 - 1200	150 (1)	685 (2)	---	---
Zn	ug/g	---	3.45 (2)	---	2.8 - 4.1	---	4.1 (1)	2.8 (1)	---
Zr	ug/g	---	6.6 (1)	---	---	---	---	6.6 (1)	---

TABLE 88A-2: INDIVIDUAL DATA FOR NBS SRM 88A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ag (ug/g)				
<	3	L	ICPES	81CHU 01
Al (ug/g)				
300			EXRF	80DAL 01
900	30		ICPES	81CHU 01
As (ug/g)				
<	5	L	ICPES	81CHU 01
Au (ug/g)				
<	3	L	ICPES	81CHU 01
Ba (ug/g)				
13	0.26		ICPES	81CHU 01
14			ITNA	85POT 02
28			XRF	76LEO 02
Be (ng/g)				
180	20		ICPES	81CHU 01
Bi (ug/g)				
<	25	L	ICPES	81CHU 01
C-Inorg (%)				
12.75	0.02		CB	80ANO 01
12.83			CB	78TER 01
Ca (%)				
20.96	0.69		ICPES	81CHU 01
22.5			EXRF	80DAL 01
Cd (ug/g)				
<	2	L	ICPES	81CHU 01
Ce (ug/g)				
<	15	L	ICPES	81CHU 01
2.46	0.27		ICPES	85JAR 02
2.7			ITNA	85POT 02
4.8			XRF	76LEO 02

Conc	Uncer	Com	Method	Reference
Cl (ug/g)				
113			WXRF	82LEO 03
Co (ug/g)				
0.5			ITNA	85POT 02
3	1		ICPES	81CHU 01
3.4			XRF	76LEO 02
Cr (ug/g)				
2.2			ITNA	85POT 02
11.7	1		ICPES	81CHU 01
Cu (ug/g)				
2.5	1		ICPES	81CHU 01
11.4			XRF	76LEO 02
Dy (ng/g)				
270	10		ICPES	85JAR 02
Er (ng/g)				
180	10		ICPES	85JAR 02
Eu (ng/g)				
70			ITNA	85POT 02
70	10		ICPES	85JAR 02
1200	600		ICPES	81CHU 01
F (ug/g)				
500			WXRF	82LEO 03
Fe (ug/g)				
2030			ITNA	85POT 02
2050	40		ICPES	81CHU 01
2200			EXRF	80DAL 01
Gd (ug/g)				
0.32	0.02		ICPES	85JAR 02
3.4	0.35		ICPES	81CHU 01
Hf (ng/g)				
180			ITNA	85POT 02

TABLE 88A-2: INDIVIDUAL DATA FOR NBS SRM 88A (cont.)

Conc	Uncer	Com	Method	Reference
Hg (ng/g)				
28.2	0.68		FAA	82FLA 01
Ho (ng/g)				
60	10		ICPES	85JAR 02
K (ug/g)				
700			EXRF	80DAL 01
1000	25		ICPES	81CHU 01
La (ug/g)				
<	5	L	ICPES	81CHU 01
1.44	0.16		ICPES	85JAR 02
1.6			ITNA	85POT 02
2.2			XRF	76LEO 02
Li (ug/g)				
<	2	L	ICPES	81CHU 01
Lu (ng/g)				
30			ITNA	85POT 02
30	10		ICPES	85JAR 02
Mg (%)				
13			EXRF	80DAL 01
13.06	0.4		ICPES	81CHU 01
Mn (ug/g)				
150			EXRF	80DAL 01
210	6.3		ICPES	81CHU 01
Mo (ug/g)				
<	3	L	ICPES	81CHU 01
Na (ug/g)				
104	7		ICPES	81CHU 01
150			ITNA	85POT 02
Nd (ug/g)				
<	20	L	ICPES	81CHU 01
1.26	0.11		ICPES	85JAR 02
1.4			ITNA	85POT 02

Conc	Uncer	Com	Method	Reference
Ni (ug/g)				
<	3	L	ICPES	81CHU 01
P (ug/g)				
70	4		ICPES	81CHU 01
220			EXRF	80DAL 01
Pb (ug/g)				
3			XRF	76LEO 02
27	3		ICPES	81CHU 01
Pr (ng/g)				
310	20		ICPES	85JAR 02
Rb (ug/g)				
2			ITNA	85POT 02
S (ug/g)				
4			CB	78TER 01
21			CB	77LAN 01
78			WXRF	82LEO 03
Sb (ug/g)				
<	10	L	ICPES	81CHU 01
Sc (ng/g)				
300			ITNA	85POT 02
Se (ug/g)				
<	30	L	ICPES	81CHU 01
Si (ug/g)				
4100			EXRF	80DAL 01
Sm (ng/g)				
280	10		ICPES	85JAR 02
300			ITNA	85POT 02
Sn (ug/g)				
<	3	L	ICPES	81CHU 01
2.1			XRF	76LEO 02

TABLE 88A-2: INDIVIDUAL DATA FOR NBS SRM 88A (cont.)

Conc	Uncer	Com	Method	Reference
Sr (ug/g)				
41			XRF	76LEO 02
41	0.8		ICPES	[illegible] 01
96			OES	[illegible] 01
Ta (ng/g)				
30			ITNA	85POT 02
Tb (ng/g)				
50			ITNA	85POT 02
Th (ng/g)				
< 25000		L	ICPES	81CHU 01
190			ITNA	85POT 02
Ti (ug/g)				
66	2		ICPES	81CHU 01
180			EXRF	80DAL 01

Conc	Uncer	Com	Method	Reference
U (ng/g)				
< 25000		L	ICPES	81CHU 01
300			ITNA	85POT 02
V (ug/g)				
2.2			OES	84PLS 01
9	1		ICPES	81CHU 01
Y (ug/g)				
2.16	0.06		ICPES	85JAR 02
2.3			XRF	76LEO 02
Yb (ng/g)				
150			ITNA	85POT 02
170	10		ICPES	85JAR 02
1200	40		ICPES	81CHU 01
Zn (ug/g)				
2.8			XRF	76LEO 02
4.1	1		ICPES	81CHU 01
Zr (ug/g)				
< 1		L	ICPES	81CHU 01
6.6			XRF	76LEO 02

TABLE 91-1: COMPILED DATA FOR NBS SRM 91 OPAL GLASS (revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	AA Mean (n)	NAA Mean (n)	OES Mean (n)	OTHER METHODS Mean ± SD (n) Method
Al	%	2.81	3.21 (1)	---	---	---	---	---	3.21 (1) TCGS
As_2O_3	ug/g	910	---	---	---	---	---	---	---
As_2O_5	ug/g	1020	---	---	---	---	---	---	---
B	ug/g	---	302 (1)	---	---	---	---	302 (1)	---
Ba	ug/g	---	79 (1)	---	---	---	---	79 (1)	---
Ca	%	7.49	7.56 (2)	---	7.54 - 7.58	7.58 (1)	---	---	7.54 (1) TCGS
Cl	ug/g	140	167 (1)	---	---	---	---	---	167 (1) COLOR
Co	ug/g	---	4.5 (1)	---	---	---	---	4.5 (1)	---
Cr	ug/g	---	26 (2)	---	26 - 26	---	---	26 (2)	---
Cu	ug/g	---	16 (1)	---	---	---	---	16 (1)	---
F	%	5.73	5.58 ± 0.23 (11)	5.62	5.1 - 5.81	---	5.39 (2)	---	5.67 ± 0.08 (6) ISE
F	%	---	---	---	---	---	---	---	5.0 (2) IC
F	%	---	---	---	---	---	---	---	5.7 (1) CPAA
F	%	---	---	---	---	---	---	---	5.81 (1) COLOR
Fe	ug/g	570	2200 ± 2200 (5)	700	430 - 5200	700 (1)	600 (1)	430 (1)	4000 (1) TCGS
Fe	ug/g	---	---	---	---	---	---	---	5200 (1) COLOR
Ga	ug/g	---	12 (1)	---	---	---	---	12 (1)	---
K	%	2.7	2.7 (2)	---	2.68 - 2.72	2.72 (1)	---	---	2.68 (1) TCGS
Mg	ug/g	---	60 (1)	---	---	---	---	---	60 (1) TCGS
Mn	ug/g	---	51 (2)	---	39 - 63	---	---	51 (2)	---
Na	%	6.29	6.26 ± 0.06 (3)	6.23	6.22 - 6.32	6.22 (1)	6.23 (1)	---	6.32 (1) TCGS
Ni	ug/g	---	3.4 ? (2)	---	0.79 - 6	---	0.79 (1)	6 (1)	---
O	%	---	49.0 (1)	---	---	---	---	---	49.0 (1) 14NAA
P	ug/g	96	---	---	---	---	---	---	---
Pb	ug/g	900	580 ? (2)	---	17 - 1150	---	---	580 (2)	---
Si	%	31.54	31.9 ± 0.4 (3)	32.1	31.5 - 32.2	31.5 (1)	32.2 (1)	---	32.1 (1) TCGS
Sr	ug/g	---	39 (1)	---	---	---	---	39 (1)	---
Ti	ug/g	110	135 ± 23 (3)	140	110 - 156	---	---	148 (2)	110 (1) TCGS
U	ng/g	---	625 (2)	---	540 - 710	---	625 (2)	---	---
V	ug/g	---	43 (1)	---	---	---	---	43 (1)	---
Zn	ug/g	640	700 (1)	---	---	700 (1)	---	---	---
Zr	ug/g	70	47 (1)	---	---	---	---	47 (1)	---

TABLE 91-2: INDIVIDUAL DATA FOR NBS SRM 91 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (%)				
3.21		35	TCGS	78GLA 04
B (ug/g)				
302			OES	64FIL 01
Ba (ug/g)				
79			OES	72AVN 01
Ca (%)				
7.54		35	TCGS	78GLA 04
7.58			AA	84SCH 01
Cl (ug/g)				
167	25		COLOR	85WHI 01
Co (ug/g)				
4.5			OES	72AVN 01
Cr (ug/g)				
26			OES	64FIL 01
26			OES	72AVN 01
Cu (ug/g)				
16			OES	72AVN 01
F (%)				
4.9	0.1		IC	83KEN 04
5.1			IC	82WIL 02
5.16		35	IENA	79GLA 03
5.55	0.09		ISE	85WHI 01
5.6	0.16	11	ISE	77HOP 01
5.62	0.08		NAA	80NOR 01
5.68	0.15		ISE	77TRO 01
5.7		11	ISE	77HOP 01
5.7	0.07		CPAA	84HAN 01
5.72			ISE	70ING 01
5.75	0.003		ISE	71PET 01
5.81	0.21		COLOR	83CHA 02

Conc	Uncer	Com	Method	Reference
Fe (ug/g)				
430			OES	64FIL 01
600		35	IENA	79GLA 03
700			AA	84SCH 01
4000		35	TCGS	78GLA 04
5200	100		COLOR	59COL 01
Ga (ug/g)				
12			OES	72AVN 01
K (%)				
2.68		35	TCGS	78GLA 04
2.72			AA	84SCH 01
Mg (ug/g)				
60		35	TCGS	78GLA 04
Mn (ug/g)				
39			OES	64FIL 01
63			OES	72AVN 01
Na (%)				
6.22			AA	84SCH 01
6.23		35	IENA	79GLA 03
6.32		35	TCGS	78GLA 04
Ni (ug/g)				
0.79		35	IENA	79GLA 03
6			OES	72AVN 01
O (%)				
49	0.6		14NAA	80NOR 01
Pb (ug/g)				
17			OES	64FIL 01
1150			OES	72AVN 01
Si (%)				
31.5	1.21		AA	82KIS 01
32.1		35	TCGS	78GLA 04
32.2		35	IENA	79GLA 03

TABLE 91-2: INDIVIDUAL DATA FOR NBS SRM 91 (cont.)

Conc	Uncer	Com	Method	Reference
Sr (ug/g)				
39			OES	72AVN 01
Ti (ug/g)				
<	350	L	IENA	79GLA 03
110		35	TCGS	78GLA 04
140			OES	72AVN 01
156			OES	64FIL 01
U (ng/g)				
540			DNA	66HAM 01
710	60		DNA	86GAU 01
V (ug/g)				
43			OES	72AVN 01
Zn (ug/g)				
700			AA	84SCH 01
Zr (ug/g)				
47			OES	64FIL 01

TABLE 92-1: COMPILED DATA FOR NBS SRM 92 SODA-LIME GLASS
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean (n)	METHOD
B	ug/g	2180 ± 90	---	---
Ca	%	5.9	5.88 (1)	MPOES
K	ug/g	5000	4810 (1)	MPOES
LOI	%	0.42	---	---
Mg	ug/g	600	---	---
Na	%	9.72	9.65 (1)	MPOES
Si	%	35	---	---
Zn	ug/g	1600	---	---

TABLE 93-1: COMPILED DATA FOR NBS SRM 93 BOROSILICATE GLASS
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean (n)	METHOD
Fe	ug/g	---	550 (1)	COLOR
Si	%	---	37.86 (1)	AA

TABLE 93A-1: COMPILED DATA FOR NBS SRM 93A: Borosilicate Glass
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean
Al	%	1.21
B	%	3.9
Ca	ug/g	70
Cl	ug/g	600
Fe	ug/g	200
K	ug/g	120
Mg	ug/g	30
Na	%	2.95
Si	%	37.7
Ti	ug/g	84
Zr	ug/g	310

TABLE 92-2: INDIVIDUAL DATA FOR NBS SRM 92
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ca (%)				
5.88			MPOES	85ZHA 01
K (ug/g)				
4810			MPOES	85ZHA 01
Na (%)				
9.65			MPOES	85ZHA 01

TABLE 93-2: INDIVIDUAL DATA FOR NBS SRM 93
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Fe (ug/g)				
550	10		COLOR	59COL 01
Si (%)				
37.86	0.84		AA	82KIS 01

TABLE 97-1: COMPILED DATA FOR NBS SRM 97 FLINT CLAY (revised 3/1/86)

ELE	UNITS	NBS Mean	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	NAA Mean (n)	OTHER METHODS Mean (n) Method	Mean (n) Method
Al	%	18.1	20.49 ± 0.02 (3)	20.5	20.47 - 20.51	---	20.47 (1) COLOR	20.5 (1) TITR
Al	%	---	---	---	---	---	---	20.51 (1) CHEM
B	ug/g	---	64 (2)	---	57 - 71.3	---	---	64.2 (2) OES
Ba	ug/g	130	170 ± 80 (3)	141	110 - 270	270 (1)	126 (2) OES	---
Be	ug/g	---	1.3 (1)	---	---	---	---	1.3 (1) OES
C	ug/g	---	3200 (1)	---	---	---	---	3200 (1) CB
Ca	ug/g	720	---	---	---	---	---	---
Ce	ug/g	---	58.8 (2)	---	57 - 60.7	57 (1)	60.7 (1) OES	---
Co	ug/g	---	3.7 ± 0.6 (3)	3.46	3.3 - 4.4	3.85 (2)	3.46 (1) OES	---
Cr	ug/g	540	550 ± 60 (6)	540	486 - 639	578 (2)	486 (1) OES	639 (1) AA
Cr	ug/g	---	---	---	---	---	500 (1) COLOR	540 (1) CHEM
Cs	ug/g	---	2.4 (1)	---	---	2.4 (1)	---	---
Cu	ug/g	24	18 ± 5 (4)	18.5	11 - 22	---	14.8 (2) OES	20 (1) CHEM
Cu	ug/g	---	---	---	---	---	---	22 (1) COLOR
Dy	ug/g	---	4.28 (1)	---	---	---	---	4.28 (1) OES
Eu	ug/g	---	1.4 (2)	---	1.24 - 1.56	1.24 (1)	1.56 (1) OES	---
Fe	ug/g	6850	6660 ± 130 (5)	6600	6500 - 6800	6600 (1)	6800 (1) TITR	6550 (2) COLOR
Fe	ug/g	---	---	---	---	---	6800 (1) CHEM	---
Ga	ug/g	---	45.1 (1)	---	---	---	---	45.1 (1) OES
Hf	ug/g	---	39.5 (1)	---	---	39.5 (1)	---	---
Hg	ng/g	---	110 (2)	---	68 - 159.2	---	110 (2) AA	---
K	ug/g	4500	---	---	---	---	---	---
LOI	%	13.35	---	---	---	---	---	---
La	ug/g	---	34 (1)	---	---	34 (1)	---	---
Li	ug/g	1070	1074 (1)	---	---	---	---	1074 (1) OES
Lu	ug/g	---	0.96 (1)	---	---	0.96 (1)	---	---
Mg	%	0.157	0.145 (2)	---	0.13 - 0.16	---	0.16 (1) CHEM	0.13 (1) COLOR
Mn	ug/g	15	50 ± 44 (3)	35	16 - 99.7	---	67 (2) OES	16 (1) CHEM
Mo	ug/g	1.3	2.0 (1)	---	---	---	---	2.0 (1) CHEM
Na	ug/g	520	---	---	---	---	---	---
Nb	ug/g	---	35.6 (1)	---	---	---	---	35.6 (1) OES
Nd	ug/g	---	19 (1)	---	---	---	19 (1) OES	---
Ni	ug/g	---	34.4 (2)	---	32 - 36.8	---	34.4 (2) OES	---
P	ug/g	350	---	---	---	---	---	---
Pb	ug/g	---	34.6 (2)	---	34.3 - 35	---	34.3 (1) OES	35 (1) AA
Rb	ug/g	---	24 (1)	---	---	24 (1)	---	---
S	ug/g	170	176 ± 22 (3)	170	158 - 200	---	200 (1) TURB	164 (2) CB
Sb	ug/g	---	1.4 (1)	---	---	1.4 (1)	---	---
Sc	ug/g	---	16.4 (2)	---	12.1 - 20.7	20.7 (1)	12.1 (1) OES	---
Si	%	20.02	20.0 (1)	---	---	---	20 (1) TITR	---
Sm	ug/g	---	5.8 (1)	---	---	5.8 (1)	---	---
Sn	ug/g	---	8.6 (2)	---	7 - 10.1	---	8.55 (2) OES	---
Sr	ug/g	---	73 ± 38 (3)	88	30 - 101	30 (1)	94.5 (2) OES	---
Ta	ug/g	---	4.2 (1)	---	---	4.2 (1)	---	---
Tb	ug/g	---	1.27 (1)	---	---	1.27 (1)	---	---
Th	ug/g	---	37 (1)	---	---	37 (1)	---	---
Ti	%	1.42	1.39 ± 0.08 (3)	1.43	1.3 - 1.43	---	1.3 (1) COLOR	1.43 (1) CHEM
Ti	%	---	---	---	---	---	1.43 (1) TITR	---
V	ug/g	225	240 ± 90 (4)	205	148 - 362	---	255 (2) OES	205 (1) COLOR
V	ug/g	---	---	---	---	---	234 (1) CHEM	---
Y	ug/g	---	35.3 (2)	---	33 - 37.6	---	35.3 (2) OES	---
Yb	ug/g	---	7.1 (2)	---	6.8 - 7.47	6.8 (1)	7.47 (1) OES	---
Zn	ug/g	---	92 (2)	---	81 - 103	103 (1)	81 (1) XRF	---
Zr	ug/g	1850	1390 (1)	---	---	1390 (1)	---	---

TABLE 97-2: INDIVIDUAL DATA FOR NBS SRM 97 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (%)				
20.47			COLOR	57SHI 01
20.5	0.03		TITR	84DAS 01
20.51			CHEM	57SHI 01
B (ug/g)				
57			OES	64FIL 01
71.3			OES	77FLA 01
Ba (ug/g)				
110			OES	77FLA 01
141			OES	58GRA 01
270	21		ITNA	77FLA 01
Be (ug/g)				
1.3			OES	77FLA 01
C (ug/g)				
3200			CB	78TER 01
Ce (ug/g)				
57	29		ITNA	77FLA 01
60.7			OES	77FLA 01
Co (ug/g)				
3.3	0.06		ITNA	77FLA 01
3.46			OES	77FLA 01
4.4			RTNA	61TUR 01
Cr (ug/g)				
486			OES	77FLA 01
500			COLOR	57SHI 01
540			CHEM	57SHI 01
576	14.4		ITNA	77FLA 01
581			RTNA	61TUR 01
639			AA	80DON 01
Cs (ug/g)				
2.4	0.08		ITNA	77FLA 01

Conc	Uncer	Com	Method	Reference
Cu (ug/g)				
11			OES	64FIL 01
18.5			OES	77FLA 01
20			CHEM	57SHI 01
22			COLOR	57SHI 01
Dy (ug/g)				
4.28			OES	77FLA 01
Eu (ug/g)				
1.24	0.03		ITNA	77FLA 01
1.56			OES	77FLA 01
Fe (ug/g)				
6500	100		COLOR	59COL 01
6600			COLOR	57SHI 01
6600	100		ITNA	77FLA 01
6800			CHEM	57SHI 01
6800	600		TITR	84DAS 01
Ga (ug/g)				
45.1			OES	77FLA 01
Hf (ug/g)				
39.5	1.19		ITNA	77FLA 01
Hg (ng/g)				
68			FAA	75HEI 01
159.2	6.22		FAA	82FLA 01
La (ug/g)				
	< 14.7	L	OES	77FLA 01
34	0.71		ITNA	77FLA 01
Li (ug/g)				
1074			OES	77FLA 01
Lu (ug/g)				
0.96	0.02		ITNA	77FLA 01

TABLE 97-2: INDIVIDUAL DATA FOR NBS SRM 97 (cont.)

Conc	Uncer	Com	Method	Reference
Mg (%)				
0.13			COLOR	57SHI 01
0.16			CHEM	57SHI 01
Mn (ug/g)				
16			CHEM	57SHI 01
35			OES	64FIL 01
99.7			OES	77FLA 01
Mo (ug/g)				
2			CHEM	57SHI 01
Nb (ug/g)				
35.6			OES	77FLA 01
Nd (ug/g)				
19			ITNA	77FLA 01
Ni (ug/g)				
32			OES	64FIL 01
36.8			OES	77FLA 01
Pb (ug/g)				
34.3			OES	77FLA 01
35			FAA	79HEI 03
Rb (ug/g)				
24	1.6		ITNA	77FLA 01
S (ug/g)				
158			CB	78TER 01
170			CB	55COL 01
200			TURB	73SHA 01
Sb (ug/g)				
1.4	0.11		ITNA	77FLA 01
Sc (ug/g)				
12.1			OES	77FLA 01
20.7	0.17		ITNA	77FLA 01
Si (%)				
20			TITR	77OHL 01
Sm (ug/g)				
<	4.64	L	OES	77FLA 01
5.8	0.08		ITNA	77FLA 01
Sn (ug/g)				
7			OES	64FIL 01
10.1			OES	77FLA 01
Sr (ug/g)				
30			RTNA	61TUR 01
88			OES	58GRA 01
101			OES	77FLA 01
Ta (ug/g)				
4.2	0.09		ITNA	77FLA 01
Tb (ug/g)				
1.27	0.02		ITNA	77FLA 01
Th (ug/g)				
37	0.48		ITNA	77FLA 01
Ti (%)				
1.3			COLOR	57SHI 01
1.43			CHEM	57SHI 01
1.43	0.03		TITR	84DAS 01
V (ug/g)				
148			OES	64FIL 01
205			COLOR	57SHI 01
234			CHEM	57SHI 01
362			OES	77FLA 01
Y (ug/g)				
33			OES	64FIL 01
37.6			OES	77FLA 01

TABLE 97-2: INDIVIDUAL DATA FOR NBS SRM 97 (cont.)

Conc	Uncer	Com	Method	Reference
Yb (ug/g)				
6.8	0.17		ITNA	77FLA 01
7.47			OES	77FLA 01
Zn (ug/g)				
81			XRF	65BAL 01
103	3.15		ITNA	77FLA 01
Zr (ug/g)				
1390	34.8		ITNA	77FLA 01

TABLE 97A-1: COMPILED DATA FOR NBS SRM 97A FLINT CLAY (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		RANGE	NAA	OTHER METHODS				
		Mean	Mean ± SD	(n)		Mean (n)	Mean	(n)	Method	Mean	(n) Method
Al	%	20.52	20.84	(1)	---	20.84 (1)	---			---	
As	ug/g	---	3.53	(1)	---	---	3.53	(1)	AA	---	
B	ug/g	---	69.4	(1)	---	---	69.4	(1)	OES	---	
Ba	ug/g	670	660	(1)	---	660 (1)	---			---	
Be	ug/g	---	3.4	(2)	3.2 - 3.55	---	3.55	(1)	OES	3.2	(1) AA
Bi	ng/g	---	733	(1)	---	---	---			733	(1) AA
C	ug/g	---	600	(1)	---	---	---			600	(1) CB
Ca	ug/g	790	---		---	---	---			---	
Cd	ng/g	---	16	(1)	---	---	---			16	(1) AA
Ce	ug/g	---	160	(2)	124 - 203	203 (1)	124	(1)	OES	---	
Co	ug/g	---	4.4	(2)	4.1 - 4.64	4.1 (1)	4.64	(1)	OES	---	
Cr	ug/g	200	190	(2)	180 - 203	180 (1)	203	(1)	OES	---	
Cs	ug/g	---	1.6	(1)	---	1.6 (1)	---			---	
Cu	ug/g	---	24.9	(1)	---	---	24.9	(1)	OES	---	
Dy	ug/g	---	8.89	(1)	---	---	8.89	(1)	OES	---	
Eu	ug/g	---	3.74	(2)	3.66 - 3.81	3.81 (1)	3.66	(1)	OES	---	
Fe	ug/g	3140	3000	(1)	---	3000 (1)	---			---	
Ga	ug/g	---	31.6	(1)	---	---	31.6	(1)	OES	---	
Hf	ug/g	---	13.4	(2)	11.3 - 15.4	13.35 (2)	---			---	
Hg	ng/g	---	388	(1)	---	---	---			388	(1) AA
K	ug/g	4150	---		---	---	---			---	
LOI	%	13.32	---		---	---	---			---	
La	ug/g	---	73	(2)	43.7 - 103	103 (1)	43.7	(1)	OES	---	
Li	ug/g	510	439	(1)	---	---	439	(1)	OES	---	
Lu	ug/g	---	0.98	(1)	---	0.98 (1)	---			---	
Mg	ug/g	900	---		---	---	---			---	
Mn	ug/g	---	5.24	(1)	---	---	5.24	(1)	OES	---	
Na	ug/g	275	---		---	---	---			---	
Nb	ug/g	---	39	(1)	---	---	39	(1)	OES	---	
Nd	ug/g	---	88	(1)	---	88 (1)	---			---	
Ni	ug/g	---	81	(1)	---	---	81	(1)	OES	---	
P	ug/g	1570	845 ?	(2)	160 - 1530	---	160	(1)	ICPES	1530	(1) COLOR
Pb	ug/g	---	40.15	(2)	38.6 - 41.7	---	41.7	(1)	OES	38.6	(1) AA
Rb	ug/g	---	< 20		---	< 20	---			---	
S	ug/g	---	308	(1)	---	---	---			308	(1) CB
Sb	ng/g	---	800	(2)	800 - 800	800 (1)	---			800	(1) AA
Sc	ug/g	---	26	(2)	21.3 - 31.3	31.3 (1)	21.3	(1)	OES	---	
Si	%	20.39	20.7	(1)	---	20.7 (1)	---			---	
Sm	ug/g	---	14	(2)	6.88 - 21.3	21.3 (1)	6.88	(1)	OES	---	
Sn	ug/g	---	6.5 ± 0.4	(3)	6.16 - 6.9	---	6.53	(1)	OES	6.53	(2) AA
Sr	ug/g	1500	860	(1)	---	---	860	(1)	OES	---	
Ta	ug/g	---	3.21	(1)	---	3.21 (1)	---			---	
Tb	ug/g	---	2.77	(1)	---	2.77 (1)	---			---	
Th	ug/g	---	31.1	(1)	---	31.1 (1)	---			---	
Ti	%	1.14	---		---	---	---			---	
U	ug/g	---	6.58	(1)	---	6.58 (1)	---			---	
V	ug/g	---	362	(1)	---	---	362	(1)	OES	---	
Y	ug/g	---	121	(1)	---	---	121	(1)	OES	---	
Yb	ug/g	---	8.9	(2)	7.7 - 10.1	7.7 (1)	10.1	(1)	OES	---	
Zn	ug/g	---	< 20		---	< 20	---			---	
Zr	ug/g	470	522	(2)	465 - 580	522 (2)	---			---	

TABLE 97A-2: INDIVIDUAL DATA FOR NBS SRM 97A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (%)				
20.84	2		IENA	84CEL 01
As (ug/g)				
3.53			HAA	84TER 04
B (ug/g)				
69.4			OES	77FLA 01
Ba (ug/g)				
660	20.6		ITNA	77FLA 01
Be (ug/g)				
3.2			AA	82TER 02
3.2		D	AA	83TER 01
3.55			OES	77FLA 01
Bi (ng/g)				
733		D	FAA	84TER 03
733			HAA	84TER 02
C (ug/g)				
600			CB	78TER 01
Cd (ng/g)				
<	200		ICPES	83UCH 02
16			AA	84TER 01
Ce (ug/g)				
124			OES	77FLA 01
203	3.51		ITNA	77FLA 01
Co (ug/g)				
4.1	0.08		ITNA	77FLA 01
4.64			OES	77FLA 01
Cr (ug/g)				
180	4.1		ITNA	77FLA 01
203			OES	77FLA 01
Cs (ug/g)				
1.6	0.6		ITNA	77FLA 01
Cu (ug/g)				
24.9			OES	77FLA 01
Dy (ug/g)				
8.89			OES	77FLA 01
Eu (ug/g)				
3.66			OES	77FLA 01
3.81	0.02		ITNA	77FLA 01
Fe (ug/g)				
3000	30		ITNA	77FLA 01
Ga (ug/g)				
31.6			OES	77FLA 01
Hf (ug/g)				
11.3	0.39		ITNA	77FLA 01
15.4			RTNA	76GAN 01
Hg (ng/g)				
387.5	22.5		FAA	82FLA 01
La (ug/g)				
43.7			OES	77FLA 01
103	1.83		ITNA	77FLA 01
Li (ug/g)				
439			OES	77FLA 01
Lu (ug/g)				
0.98	0.04		ITNA	77FLA 01
Mn (ug/g)				
5.24			OES	77FLA 01

TABLE 97A-2: INDIVIDUAL DATA FOR NBS SRM 97A (cont.)

Conc	Uncer	Com	Method	Reference
Nb (ug/g)				
39			OES	77FLA 01
Nd (ug/g)				
88	3.7		ITNA	77FLA 01
Ni (ug/g)				
81			OES	77FLA 01
P (%)				
0.016	0.0001		ICPES	83UCH 01
0.153	0.001		COLOR	83UCH 01
Pb (ug/g)				
38.6			AA	84TER 01
41.7			OES	77FLA 01
Rb (ug/g)				
<	20	L	ITNA	77FLA 01
S (ug/g)				
308			CB	78TER 01
Sb (ng/g)				
800			HAA	84TER 04
800	100		ITNA	77FLA 01
Sc (ug/g)				
21.3			OES	77FLA 01
31.3	0.75		ITNA	77FLA 01
Si (%)				
20.7	1		IENA	84CEL 01
Sm (ug/g)				
6.88			OES	77FLA 01
21.3	0.69		ITNA	77FLA 01

Conc	Uncer	Com	Method	Reference
Sn (ug/g)				
6.16			AA	82TER 01
6.53			OES	77FLA 01
6.9	0.28		FAA	85TER 01
Sr (ug/g)				
860			OES	77FLA 01
Ta (ug/g)				
3.21	0.06		ITNA	77FLA 01
Tb (ug/g)				
2.77	0.08		ITNA	77FLA 01
Th (ug/g)				
31.1	0.37		ITNA	77FLA 01
U (ug/g)				
6.58			RTNA	76GAN 01
V (ug/g)				
362			OES	77FLA 01
Y (ug/g)				
121			OES	77FLA 01
Yb (ug/g)				
7.7	0.23		ITNA	77FLA 01
10.1			OES	77FLA 01
Zn (ug/g)				
<	20	L	ITNA	77FLA 01
Zr (ug/g)				
465	19		RTNA	76GAN 01
580	21		ITNA	77FLA 01

TABLE 98-1: COMPILED DATA FOR NBS SRM 98 PLASTIC CLAY (revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	NAA Mean (n)	OES Mean ± SD (n)	OTHER METHODS Mean (n) Method
Al	%	13.51	13.53 ± 0.07 (5)	13.5	13.48 - 13.65	---	13.5 (1)	13.50 (2) CHEM
Al	%	---	---	---	---	---	---	13.65 (1) COLOR
Al	%	---	---	---	---	---	---	13.48 (1) TITR
B	ug/g	---	140 ± 80 (4)	78.5	68 - 250	---	140 ± 80 (4)	---
Ba	ug/g	---	680 ± 115 (3)	670	570 - 800	670 (1)	685 (2)	---
Be	ug/g	---	4.1 (1)	---	---	---	4.1 (1)	---
C	ug/g	---	4000 (1)	---	---	---	---	4000 (1) CB
Ca	ug/g	1500	1530 ± 60 (3)	1500	1500 - 1600	---	1500 (1)	1600 (1) TITR
Ca	ug/g	---	---	---	---	---	---	1500 (1) CHEM
Ce	ug/g	---	127 (2)	---	119 - 135	135 (1)	119 (1)	---
Co	ug/g	---	15.8 ± 1.4 (5)	16.5	13.8 - 17	15.2 (2)	16.3 ± 1.1 (3)	---
Cr	ug/g	140	138 ± 18 (8)	136	113 - 170	122 (2)	135 ± 16 (3)	170 (1) COLOR
Cr	ug/g	---	---	---	---	---	---	144 (1) CHEM
Cr	ug/g	---	---	---	---	---	---	143 (1) AA
Cs	ug/g	---	10.7 (1)	---	---	10.7 (1)	---	---
Cu	ug/g	72	64 ± 24 (6)	70	33.7 - 100	---	60 ± 30 (4)	70 (1) COLOR
Cu	ug/g	---	---	---	---	---	---	72 (1) CHEM
Dy	ug/g	---	7.07 (1)	---	---	---	7.07 (1)	---
Eu	ug/g	---	1.90 (2)	---	1.74 - 2.07	1.74 (1)	2.07 (1)	---
Fe	%	1.43	1.32 ± 0.13 (6)	1.38	1.12 - 1.43	1.4 (1)	1.17 (1)	1.39 (2) COLOR
Fe	%	---	---	---	---	---	---	1.28 (2) CHEM
Ga	ug/g	---	52 (2)	---	24.1 - 80	---	52 (2)	---
Hf	ug/g	---	7 (1)	---	---	7 (1)	---	---
Hg	ng/g	---	463 (1)	---	---	---	---	463 (1) AA
K	%	2.63	---	---	---	---	---	---
LOI	%	7.28	---	---	---	---	---	---
La	ug/g	---	95 ± 50 (3)	79	55.2 - 150	79 (1)	103 (2)	---
Li	ug/g	140	144 (1)	---	---	---	144 (1)	---
Lu	ng/g	---	650 (1)	---	---	650 (1)	---	---

TABLE 98-1: COMPILED DATA FOR NBS SRM 98 PLASTIC CLAY (cont.)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	NAA Mean (n)	OES Mean ± SD (n)	OTHER METHODS Mean (n) Method
Mg	ug/g	4340	4300 ± 190 (5)	4300	4100 - 4600	---	4200 (1)	4300 (2) CHEM
Mg	ug/g	---	---	---	---	---	---	4100 (1) TITR
Mg	ug/g	---	---	---	---	---	---	4600 (1) COLOR
Mn	ug/g	39	69 ± 33 (6)	58.8	39 - 100	---	84 ± 30 (4)	39.5 (2) CHEM
Mo	ug/g	---	1.0 (1)	---	---	---	---	1.0 (1) CHEM
Na	ug/g	1930	---	---	---	---	---	---
Nd	ug/g	---	49 (1)	---	---	49 (1)	---	---
Ni	ug/g	---	44 ± 8 (3)	40	39 - 52.8	---	44 ± 8 (3)	---
P	ug/g	350	370 (2)	---	350 - 390	---	---	370 (2) COLOR
Pb	ug/g	---	44 (2)	---	40 - 47.5	---	44 (2)	---
Rb	ug/g	---	154 (1)	---	---	154 (1)	---	---
S	ug/g	280	270 ± 25 (3)	270	250 - 300	---	---	260 (2) CB
S	ug/g	---	---	---	---	---	---	300 (1) TURB
Sb	ug/g	---	1.3 (1)	---	---	1.3 (1)	---	---
Sc	ug/g	---	25 ± 4 (3)	27.09	22.1 - 30	22.9 (1)	26 (2)	---
Se	ug/g	---	1.20 ± 0.16 (3)	1.2	1.04 - 1.37	---	---	1.04 (1) FLUOR
Si	%	27.6	27.60 ± 0.01 (3)	27.6	27.59 - 27.6	---	27.6 (1)	27.6 (1) CHEM
Si	%	---	---	---	---	---	---	27.59 (1) TITR
Sm	ug/g	---	8.3 (2)	---	6.3 - 10.3	10.3 (1)	6.3 (1)	---
Sn	ug/g	---	6.47 (1)	---	---	---	6.47 (1)	---
Sr	ug/g	---	290 ± 70 (5)	300	205 - 390	205 (1)	310 ± 70 (4)	---
Ta	ug/g	---	2.22 (1)	---	---	2.22 (1)	---	---
Tb	ug/g	---	1.35 (1)	---	---	1.35 (1)	---	---
Th	ug/g	---	19.5 (1)	---	---	19.5 (1)	---	---
Ti	ug/g	8560	9000 ± 600 (6)	8690	8400 - 10000	---	9200 ± 700 (3)	9300 (1) COLOR
Ti	ug/g	---	---	---	---	---	---	8500 (2) CHEM
V	ug/g	140	180 ± 80 (8)	140	106 - 310	---	210 ± 100 (5)	140 (2) CHEM
V	ug/g	---	---	---	---	---	---	161 (1) COLOR
Y	ug/g	---	38 ± 9 (3)	40	28 - 46.7	---	38 ± 9 (3)	---
Yb	ug/g	---	11 ± 9 (3)	6.8	4.9 - 21.2	4.9 (1)	14 (2)	---
Zn	ug/g	---	125 (1)	---	---	125 (1)	---	---
Zr	ug/g	300	300 ± 60 (6)	300	190 - 377	340 (1)	280 ± 80 (4)	300 (1) CHEM

TABLE 98-2: INDIVIDUAL DATA FOR NBS SRM 98 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (%)				
13.48			TITR	58WAT 01
13.5			CHEM	62JOE 01
13.5			OES	62JOE 01
13.51			CHEM	57SHI 01
13.65			COLOR	57SHI 01
B (ug/g)				
68			OES	64FIL 01
78.5			OES	77FLA 01
150		3	OES	63CLA 01
250		3	OES	63CLA 01
Ba (ug/g)				
570			OES	58GRA 01
670	10.8		ITNA	77FLA 01
800			OES	63CLA 01
Be (ug/g)				
4.1			OES	77FLA 01
C (ug/g)				
4000			CB	78TER 01
Ca (ug/g)				
1500			OES	62JOE 01
1500			CHEM	62JOE 01
1600			TITR	80HIT 02
Ce (ug/g)				
119			OES	77FLA 01
135	1.32		ITNA	77FLA 01
Co (ug/g)				
13.8	0.1		ITNA	77FLA 01
15			OES	63CLA 01
16.5			RTNA	61TUR 01
16.9			OES	77FLA 01
17			OES	64FIL 01

Conc	Uncer	Com	Method	Reference
Cr (ug/g)				
113	2.33		ITNA	77FLA 01
119			OES	64FIL 01
130			RTNA	61TUR 01
136			OES	77FLA 01
143			AA	80DON 01
144			CHEM	57SHI 01
150		3	OES	63CLA 01
170			COLOR	57SHI 01
250		3	OES	63CLA 01
1400			CHEM	62JOE 01
1600			OES	62JOE 01
Cs (ug/g)				
10.7	0.17		ITNA	77FLA 01
Cu (ug/g)				
33.7			OES	77FLA 01
39			OES	64FIL 01
70		3	OES	63CLA 01
70			COLOR	57SHI 01
72			CHEM	57SHI 01
100		3	OES	63CLA 01
Dy (ug/g)				
7.07			OES	77FLA 01
Eu (ug/g)				
1.74	0.02		ITNA	77FLA 01
2.07			OES	77FLA 01
Fe (%)				
1.12			CHEM	62JOE 01
1.17			OES	62JOE 01
1.38	0.01		COLOR	59COL 01
1.4			COLOR	57SHI 01
1.4	0.05		ITNA	77FLA 01
1.43			CHEM	57SHI 01
Ga (ug/g)				
<	100	L	OES	63CLA 01
24.1			OES	77FLA 01
80		3	OES	63CLA 01

TABLE 98-2: INDIVIDUAL DATA FOR NBS SRM 98 (cont.)

Conc	Uncer	Com	Method	Reference
Hf (ug/g)				
7	0.42		ITNA	77FLA 01
Hg (ng/g)				
462.6	12.1		FAA	82FLA 01
La (ug/g)				
55.2			OES	77FLA 01
79	1.7		ITNA	77FLA 01
150			OES	63CLA 01
Li (ug/g)				
144			OES	77FLA 01
Lu (ng/g)				
650			ITNA	77FLA 01
Mg (ug/g)				
4100			TITR	80HIT 02
4200			OES	62JOE 01
4300			CHEM	62JOE 01
4300			CHEM	57SHI 01
4600			COLOR	57SHI 01
Mn (ug/g)				
39			OES	64FIL 01
39			CHEM	57SHI 01
40			CHEM	62JOE 01
96.5			OES	77FLA 01
100		3	OES	63CLA 01
100		3	OES	63CLA 01
Mo (ug/g)				
<	1	L	OES	63CLA 01
1			CHEM	57SHI 01
Nd (ug/g)				
49	0.58		ITNA	77FLA 01
Ni (ug/g)				
39			OES	64FIL 01
40			OES	63CLA 01
52.8			OES	77FLA 01
P (ug/g)				
350		11	COLOR	76WHI 01
390		11	COLOR	76WHI 01
Pb (ug/g)				
40			OES	63CLA 01
47.5			OES	77FLA 01
Rb (ug/g)				
154	1.12		ITNA	77FLA 01
S (ug/g)				
250			CB	78TER 01
270			CB	55COL 01
300			TURB	73SHA 01
Sb (ug/g)				
1.3	0.12		ITNA	77FLA 01
Sc (ug/g)				
22.1			OES	77FLA 01
22.9	0.06		ITNA	77FLA 01
30			OES	63CLA 01
Se (ug/g)				
1.04	0.08		FLUOR	74CRE 01
1.2			UU	74WAH 01
1.37			UU	65WEL 01
Si (%)				
27.59			TITR	77OHL 01
27.6			CHEM	62JOE 01
27.6			OES	62JOE 01
Sm (ug/g)				
6.3			OES	77FLA 01
10.3	0.42		ITNA	77FLA 01
Sn (ug/g)				
6.47			OES	77FLA 01

TABLE 98-2: INDIVIDUAL DATA FOR NBS SRM 98 (cont.)

Conc	Uncer	Com	Method	Reference
Sr (ug/g)				
205			RTNA	61TUR 01
230			OES	58GRA 01
300			OES	63CLA 01
326			OES	77FLA 01
390			OES	75THO 01
Ta (ug/g)				
2.22	0.03		ITNA	77FLA 01
Tb (ug/g)				
1.35	0.02		ITNA	77FLA 01
Th (ug/g)				
19.5	0.21		ITNA	77FLA 01
Ti (ug/g)				
8400			CHEM	62JOE 01
8600			CHEM	57SHI 01
8690			OES	62JOE 01
9000		3	OES	63CLA 01
9300			COLOR	57SHI 01
10000		3	OES	63CLA 01

Conc	Uncer	Com	Method	Reference
V (ug/g)				
106			OES	64FIL 01
120			OES	62JOE 01
140			CHEM	62JOE 01
140			CHEM	57SHI 01
161			COLOR	57SHI 01
200		3	OES	63CLA 01
300		3	OES	63CLA 01
310			OES	77FLA 01
Y (ug/g)				
28			OES	64FIL 01
40			OES	63CLA 01
46.7			OES	77FLA 01
Yb (ug/g)				
4.9	0.1		ITNA	77FLA 01
6.8			OES	77FLA 01
21.2			OES	77FLA 01
Zn (ug/g)				
125	2.1		ITNA	77FLA 01
Zr (ug/g)				
190			OES	64FIL 01
270			OES	62JOE 01
300			OES	63CLA 01
300			CHEM	62JOE 01
340	19.6		ITNA	77FLA 01
377			OES	77FLA 01

TABLE 98A-1: COMPILED DATA FOR NBS SRM 98A PLASTIC CLAY (revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean ± SD (n)	RANGE	NAA Mean (n)	OES Mean (n)	OTHER METHODS Mean (n) Method
Al	%	17.56	17.42 (1)	---	17.42 (1)	---	---
As	ug/g	---	11.4 (1)	---	---	---	11.4 (1) AA
B	ug/g	---	120 (1)	---	---	120 (1)	---
Ba	ug/g	270	320 (2)	168 - 480	480 (1)	168 (1)	---
Be	ug/g	---	5.4 (2)	4.8 - 5.93	---	5.93 (1)	4.8 (1) AA
Bi	ng/g	---	790 (1)	---	---	---	790 (1) AA
C	ug/g	---	8100 (1)	---	---	---	8100 (1) CB
Ca	ug/g	2200	---	---	---	---	---
Cd	ng/g	---	47 (1)	---	---	---	47 (1) AA
Ce	ug/g	---	200 (2)	180 - 219	219 (1)	180 (1)	---
Co	ug/g	---	13 (2)	11.5 - 14.4	11.5 (1)	14.4 (1)	---
Cr	ug/g	200	223 (2)	212 - 234	212 (1)	234 (1)	---
Cs	ug/g	---	6.2 (1)	---	6.2 (1)	---	---
Cu	ug/g	---	121 (1)	---	---	121 (1)	---
Dy	ug/g	---	17.5 (1)	---	---	17.5 (1)	---
Eu	ug/g	---	3.35 (2)	3.18 - 3.52	3.18 (1)	3.52 (1)	---
Fe	ug/g	9370	8800 (1)	---	8800 (1)	---	---
Ga	ug/g	---	23.3 (1)	---	---	23.3 (1)	---
Hf	ug/g	---	7.3 (1)	---	7.3 (1)	---	---
Hg	ng/g	---	39.3 (1)	---	---	---	39.3 (1) AA
K	ug/g	8630	---	---	---	---	---
LOI	%	12.44	---	---	---	---	---
La	ug/g	---	130 (2)	91.7 - 162	162 (1)	91.7 (1)	---
Li	ug/g	325	291 (1)	---	---	291 (1)	---
Lu	ug/g	---	1.15 (1)	---	1.15 (1)	---	---
Mg	ug/g	2500	---	---	---	---	---
Mn	ug/g	---	41.4 (1)	---	---	41.4 (1)	---
Na	ug/g	610	---	---	---	---	---
Nb	ug/g	---	39.9 (1)	---	---	39.9 (1)	---
Nd	ug/g	---	98 (1)	---	98 (1)	---	---
Ni	ug/g	---	162 (1)	---	---	162 (1)	---
P	ug/g	480	---	---	---	---	---
Pb	ug/g	---	68 (2)	66.8 - 69.2	---	69.2 (1)	66.8 (1) AA
Rb	ug/g	---	35 (1)	---	35 (1)	---	---
S	ug/g	---	1300 (1)	---	---	---	1300 (1) CB
Sb	ug/g	---	2.4 (2)	2.3 - 2.57	2.3 (1)	---	2.57 (1) AA
Sc	ug/g	---	32 (2)	28.8 - 34.8	34.8 (1)	28.8 (1)	---
Si	%	22.85	22.2 (1)	---	22.2 (1)	---	---
Sm	ug/g	---	12 (2)	9.18 - 15	15 (1)	9.18 (1)	---
Sn	ug/g	---	5.3 ± 0.4 (3)	4.88 - 5.76	---	4.88 (1)	5.50 (2) AA
Sr	ug/g	330	438 (1)	---	---	438 (1)	---
Ta	ug/g	---	2.46 (1)	---	2.46 (1)	---	---
Tb	ug/g	---	2.92 (1)	---	2.92 (1)	---	---
Th	ug/g	---	23.9 (1)	---	23.9 (1)	---	---
Ti	%	0.964	---	---	---	---	---
Tl	ng/g	---	351 (1)	---	---	---	351 (1) ASV
V	ug/g	---	554 (1)	---	---	554 (1)	---
Y	ug/g	---	176 (1)	---	---	176 (1)	---
Yb	ug/g	---	9.8 (2)	9.3 - 10.3	9.3 (1)	10.3 (1)	---
Zn	ug/g	---	< 23	---	< 23	---	---
Zr	ug/g	---	740 (1)	---	740 (1)	---	---

TABLE 98A-2: INDIVIDUAL DATA FOR NBS SRM 98A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (%)				
17.42	2.5		IENA	84CEL 01
As (ug/g)				
11.4			HAA	84TER 04
B (ug/g)				
120			OES	77FLA 01
Ba (ug/g)				
168			OES	77FLA 01
480	20		ITNA	77FLA 01
Be (ug/g)				
4.8		D	AA	83TER 01
4.8			AA	82TER 02
5.93			OES	77FLA 01
Bi (ng/g)				
790		D	FAA	84TER 03
790			HAA	84TER 02
C (ug/g)				
8100			CB	78TER 01
Cd (ng/g)				
47			AA	84TER 01
Ce (ug/g)				
180			OES	77FLA 01
219	0.29		ITNA	77FLA 01
Co (ug/g)				
11.5	0.06		ITNA	77FLA 01
14.4			OES	77FLA 01
Cr (ug/g)				
212	4.8		ITNA	77FLA 01
234			OES	77FLA 01
Cs (ug/g)				
6.2	0.06		ITNA	77FLA 01
Cu (ug/g)				
121			OES	77FLA 01
Dy (ug/g)				
17.5			OES	77FLA 01
Eu (ug/g)				
3.18	0.02		ITNA	77FLA 01
3.52			OES	77FLA 01
Fe (ug/g)				
8800	30		ITNA	77FLA 01
Ga (ug/g)				
23.3			OES	77FLA 01
Hf (ug/g)				
7.3	0.14		ITNA	77FLA 01
Hg (ng/g)				
39.3	4.8		FAA	82FLA 01
La (ug/g)				
91.7			OES	77FLA 01
162	2.99		ITNA	77FLA 01
Li (ug/g)				
291			OES	77FLA 01
Lu (ug/g)				
1.15	0.06		ITNA	77FLA 01
Mn (ug/g)				
41.4			OES	77FLA 01

TABLE 98A-2: INDIVIDUAL DATA FOR NBS SRM 98A

Conc	Uncer	Com	Method	Reference
Nb (ug/g)				
39.9			OES	77FLA 01
Nd (ug/g)				
98	2.6		ITNA	77FLA 01
Ni (ug/g)				
162			OES	77FLA 01
Pb (ug/g)				
66.8			AA	84TER 01
69.2			OES	77FLA 01
Rb (ug/g)				
35	2.3		ITNA	77FLA 01
S (ug/g)				
1300			CB	78TER 01
Sb (ug/g)				
2.3	0.1		ITNA	77FLA 01
2.57			HAA	84TER 04
Sc (ug/g)				
28.8			OES	77FLA 01
34.8	0.21		ITNA	77FLA 01
Si (%)				
22.2	1.2		IENA	84CEL 01
Sm (ug/g)				
9.18			OES	77FLA 01
15	2.4		ITNA	77FLA 01
Sn (ug/g)				
4.88			OES	77FLA 01
5.25			AA	82TER 01
5.76	0.3		FAA	85TER 01
Sr (ug/g)				
438			OES	77FLA 01
Ta (ug/g)				
2.46	0.03		ITNA	77FLA 01
Tb (ug/g)				
2.92	0.06		ITNA	77FLA 01
Th (ug/g)				
23.9	0.11		ITNA	77FLA 01
Tl (ng/g)				
351	40	7	ASV	82CAL 01
V (ug/g)				
554			OES	77FLA 01
Y (ug/g)				
176			OES	77FLA 01
Yb (ug/g)				
9.3	0.29		ITNA	77FLA 01
10.3			OES	77FLA 01
Zn (ug/g)				
<	23	L	ITNA	77FLA 01
Zr (ug/g)				
740	32		ITNA	77FLA 01

TABLE 99-1: COMPILED DATA FOR NBS SRM 99 SODA FELDSPAR (revised 3/1/86)

ELE	UNITS	NBS Mean	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	NAA Mean (n)	OES Mean ± SD (n)	OTHER METHODS Mean (n) Method
Al	%	10.08	10.07 (1)	---	---	---	---	10.07 (1) TITR
B	ug/g	---	10 (1)	---	---	---	10 (1)	---
Ba	ug/g	90	< 130	---	---	< 130	< 800	---
Ca	ug/g	2570	---	---	---	---	---	---
Ce	ug/g	---	8 (1)	---	---	8 (1)	---	---
Co	ng/g	---	740 (2)	---	700 - 780	740 (2)	---	---
Cr	ug/g	---	7.2 ± 5.1 (3)	8.51	3.3 - 13	4.3 (2)	13 (1)	---
Cs	ng/g	---	700 (1)	---	---	700 (1)	---	---
Cu	ug/g	---	21 (2)	---	20 - 22	---	21 (2)	---
Eu	ng/g	---	350 (1)	---	---	350 (1)	---	---
Fe	ug/g	470	500 (1)	---	---	500 (1)	---	---
Ga	ug/g	---	30 (1)	---	---	---	30 (1)	---
Hf	ng/g	---	900 (1)	---	---	900 (1)	---	---
K	ug/g	3400	---	---	---	---	---	---
LOI	%	0.52	---	---	---	---	---	---
La	ug/g	---	< 8	---	---	< 8	< 100	---
Lu	ng/g	---	< 200	---	---	< 200	---	---
Mg	ug/g	320	---	---	---	---	---	---
Mn	ug/g	< 70	31 (2)	---	12 - 50	---	31 (2)	---
Na	%	7.96	7.94 (1)	---	---	---	---	7.94 (1) XRF
Nd	ug/g	---	< 4	---	---	< 4	---	---
Ni	ug/g	---	15 (1)	---	---	---	15 (1)	---
P	ug/g	620	567 (1)	---	---	---	567 (1)	---
Pb	ug/g	---	106 (2)	---	62 - 150	---	106 (2)	---
Rb	ug/g	---	23 (1)	---	---	23 (1)	---	---
Sb	ng/g	---	500 (1)	---	---	500 (1)	---	---
Sc	ng/g	---	830 (1)	---	---	830 (1)	---	---
Si	%	32.06	32.05 (2)	---	32.05 - 32.05	---	---	32.05 (1) TITR
Si	%	---	---	---	---	---	---	32.05 (1) COLOR
Sm	ug/g	---	< 2	---	---	< 2	---	---
Sr	ug/g	---	220 ± 160 (3)	130	120 - 400	120 (1)	265 (2)	---
Ta	ug/g	---	1.9 (1)	---	---	1.9 (1)	---	---
Tb	ng/g	---	280 (1)	---	---	280 (1)	---	---
Th	ug/g	---	1.6 (1)	---	---	1.6 (1)	---	---
Ti	ug/g	100	240 ± 220 (4)	68	61 - 560	---	140 ± 70 (3)	560 (1) COLOR
U	ug/g	---	1.09 (1)	---	---	1.09 (1)	---	---
V	ug/g	---	< 10	---	---	---	< 10	---
Y	ug/g	---	10 (1)	---	---	---	10 (1)	---
Yb	ug/g	---	1 (1)	---	---	1 (1)	---	---
Zn	ug/g	---	15.9 ± 1.8 (3)	15	14.6 - 18	16.3 (2)	---	---
Zr	ug/g	---	26 (2)	---	11 - 40	---	---	---

TABLE 99-2: INDIVIDUAL DATA FOR NBS SRM 99 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (%)				
10.07			TITR	58WAT 01
B (ug/g)				
10			OES	63CLA 01
Ba (ug/g)				
<	130	L	ITNA	77FLA 01
<	800	L	OES	63CLA 01
Ce (ug/g)				
8	0.6		ITNA	77FLA 01
Co (ng/g)				
<	10000	L	OES	63CLA 01
700	30		ITNA	77FLA 01
780	120		RTNA	61TUR 01
Cr (ug/g)				
<	20	L	OES	63CLA 01
3.3	0.16		ITNA	77FLA 01
5.3			RTNA	61TUR 01
13			OES	64FIL 01
Cs (ng/g)				
700	100		ITNA	77FLA 01
Cu (ug/g)				
20			OES	63CLA 01
22			OES	64FIL 01
Eu (ng/g)				
350			ITNA	77FLA 01
Fe (ug/g)				
500			ITNA	77FLA 01
Ga (ug/g)				
30			OES	63CLA 01

Conc	Uncer	Com	Method	Reference
Hf (ng/g)				
900	60		ITNA	77FLA 01
La (ug/g)				
<	8	L	ITNA	77FLA 01
<	100	L	OES	63CLA 01
Lu (ng/g)				
<	200	L	ITNA	77FLA 01
Mn (ug/g)				
12			OES	64FIL 01
50			OES	63CLA 01
Na (%)				
7.94			WXRF	83BAL 01
Nd (ug/g)				
<	4	L	ITNA	77FLA 01
Ni (ug/g)				
15			OES	63CLA 01
P (ug/g)				
567			OES	64FIL 01
Pb (ug/g)				
62			OES	64FIL 01
150			OES	63CLA 01
Rb (ug/g)				
23	1.6		ITNA	77FLA 01
Sb (ng/g)				
500	60		ITNA	77FLA 01
Sc (ng/g)				
<	10000	L	OES	63CLA 01
830	10		ITNA	77FLA 01

TABLE 99-2: INDIVIDUAL DATA FOR NBS SRM 99 (cont.)

Conc	Uncer	Com	Method	Reference
Si (%)				
32.05			COLOR	82SAR 01
32.05	0.01		TITR	77OHL 01
Sm (ug/g)				
<	2	L	ITNA	77FLA 01
Sr (ug/g)				
120			RTNA	61TUR 01
130			OES	75THO 01
400			OES	63CLA 01
Ta (ug/g)				
1.9	0.02		ITNA	77FLA 01
Tb (ng/g)				
280	6		ITNA	77FLA 01
Th (ug/g)				
1.6	0.03		ITNA	77FLA 01
Ti (ug/g)				
61			OES	64FIL 01
150		3	OES	63CLA 01
200		3	OES	63CLA 01
560			COLOR	63KOR 01
U (ug/g)				
1.09			DNA	66HAM 01
V (ug/g)				
<	10	L	OES	63CLA 01
Y (ug/g)				
10			OES	63CLA 01
Yb (ug/g)				
1	0.06		ITNA	77FLA 01
Zn (ug/g)				
14.6			RTNA	65BAL 01
15			XRF	65BAL 01
18	0.82		ITNA	77FLA 01
Zr (ug/g)				
<	100	L	ITNA	77FLA 01
11			OES	64FIL 01
40			OES	63CLA 01

TABLE 99A-1: COMPILED DATA FOR NBS SRM 99A SODA FELDSPAR (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS	MEDIAN	RANGE	AA	NAA	OTHER METHODS
		Mean	Mean ± SD (n)			Mean (n)	Mean (n)	Mean (n) Method
Al	%	10.8	---	---	---	---	---	---
Ba	ug/g	2330	2570 (1)	---	---	---	2570 (1)	---
Be	ug/g	---	2.02 (1)	---	---	2.02 (1)	---	---
Bi	ng/g	---	3 (1)	---	---	3 (1)	---	---
C	ug/g	---	300 (1)	---	---	---	---	300 (1) CB
Ca	%	1.53	1.51 (1)	---	---	1.51 (1)	---	---
Cd	ng/g	---	< 200	---	---	---	---	---
Ce	ug/g	---	5 (1)	---	---	---	5 (1)	---
Co	ng/g	---	100 (1)	---	---	---	100 (1)	---
Cr	ug/g	---	< 3	---	---	---	< 3	---
Cs	ug/g	---	5 ? (2)	---	0.5 - 9	9 (1)	0.5 (1)	---
Eu	ng/g	---	820 (1)	---	---	---	820 (1)	---
Fe	ug/g	450	475 (2)	---	450 - 500	450 (1)	500 (1)	---
Hf	ng/g	---	300 (1)	---	---	---	300 (1)	---
Hg	ng/g	---	165 (1)	---	---	165 (1)	---	---
K	%	4.3	4.27 ± 0.12 (3)	4.2	4.2 - 4.4	4.4 (1)	---	4.2 (1) FE
K	%	---	---	---	---	---	---	4.2 (1) ISE
LOI	%	0.26	---	---	---	---	---	---
La	ug/g	---	22 (1)	---	---	---	22 (1)	---
Lu	ng/g	---	< 100	---	---	---	< 100	---
Mg	ug/g	120	130 (1)	---	---	130 (1)	---	---
Na	%	4.6	4.55 ± 0.09 (3)	4.6	4.45 - 4.6	4.45 (1)	---	4.6 (1) ISE
Na	%	---	---	---	---	---	---	4.6 (1) FE
Nd	ug/g	---	< 4	---	---	---	< 4	---
P	ug/g	87	55 (2)	---	50 - 60	---	---	60 (1) COLOR
Rb	ug/g	---	104 (2)	---	100 - 109	100 (1)	109 (1)	---
S	ug/g	---	19 (1)	---	---	---	---	---
Sb	ng/g	---	< 300	---	---	---	< 300	---
Sc	ng/g	---	230 (1)	---	---	---	230 (1)	---
Si	%	30.4	30.42 (1)	---	---	30.42 (1)	---	---
Sm	ng/g	---	500 (1)	---	---	---	500 (1)	---
Sn	ug/g	---	0.45 (1)	---	---	---	---	---
Ta	ng/g	---	< 200	---	---	---	< 200	---
Tb	ng/g	---	< 200	---	---	---	< 200	---
Th	ng/g	---	500 (1)	---	---	---	500 (1)	---
Ti	ug/g	42	---	---	---	---	---	---
Yb	ng/g	---	< 300	---	---	---	< 300	---
Zn	ug/g	---	< 7	---	---	---	< 7	---
Zr	ug/g	---	70 (1)	---	---	---	70 (1)	---

TABLE 99A-2: INDIVIDUAL DATA FOR NBS SRM 99A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ba (ug/g)				
2570	38.6		ITNA	77FLA 01
Be (ng/g)				
2020			AA	83TER 01
Bi (ng/g)				
3			FAA	84TER 03
C (ug/g)				
300			CB	78TER 01
Ca (%)				
1.51			AA	73RAM 01
Cd (ng/g)				
<	200		ICPES	83UCH 02
Ce (ug/g)				
5	0.29		ITNA	77FLA 01
Co (ng/g)				
100			ITNA	77FLA 01
Cr (ug/g)				
<	3	L	ITNA	77FLA 01
Cs (ug/g)				
0.5	0.03		ITNA	77FLA 01
9			AA	72ALL 01
Eu (ng/g)				
820	4		ITNA	77FLA 01
Fe (ug/g)				
450			AA	73RAM 01
500			ITNA	77FLA 01
Hf (ng/g)				
300	30		ITNA	77FLA 01
Hg (ng/g)				
164.6	7.35		FAA	82FLA 01
K (%)				
4.2			FE	75PUF 01
4.2	0.13		ISE	75PUF 01
4.4			AA	73RAM 01
La (ug/g)				
22	1.9		ITNA	77FLA 01
Lu (ng/g)				
<	100	L	ITNA	77FLA 01
Mg (ug/g)				
130			AA	73RAM 01
Na (%)				
4.45			AA	73RAM 01
4.6			FE	75PUF 01
4.6	0.1		ISE	75PUF 01
Nd (ug/g)				
<	4	L	ITNA	77FLA 01
P (%)				
0.005	0.0001		ICPES	83UCH 01
0.006	0.0002		COLOR	83UCH 01
Rb (ug/g)				
100			AA	72ALL 01
109	1.2		ITNA	77FLA 01
S (ug/g)				
19			CB	78TER 01

TABLE 99A-2: INDIVIDUAL DATA FOR NBS SRM 99A

Conc	Uncer	Com	Method	Reference
Sb (ng/g)				
<	300	L	ITNA	77FLA 01
Sc (ng/g)				
230			ITNA	77FLA 01
Si (%)				
30.42	0.4		AA	82KIS 01
Sm (ng/g)				
500	70		ITNA	77FLA 01
Sn (ug/g)				
0.45			AA	82TER 01

Conc	Uncer	Com	Method	Reference
Ta (ng/g)				
<	200	L	ITNA	77FLA 01
Tb (ng/g)				
<	200	L	ITNA	77FLA 01
Th (ng/g)				
500			ITNA	77FLA 01
Yb (ng/g)				
<	300	L	ITNA	77FLA 01
Zn (ug/g)				
<	7	L	ITNA	77FLA 01
Zr (ug/g)				
70			ITNA	77FLA 01

TABLE 120A-1: COMPILED DATA ON NBS SRM 120A PHOSPHATE ROCK (revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	ICPES Mean (n)	OTHER METHODS Mean ± SD (n) Method
Al	ug/g	5000	4500 (1)	---	---	4500 (1)	---
Be	ug/g	---	1.88 (1)	---	---	---	1.88 (1) AA
C	%	---	1.04 (1)	---	---	---	1.04 (1) CB
C-inorg	ug/g	8700	---	---	---	---	---
Ca	%	36	36.06 (2)	---	36.02 - 36.1	36.1 (1)	36.02 (1) TITR
Cd	ug/g	---	11.8 (1)	---	---	---	11.8 (1) AA
F	%	3.92	3.90 ± 0.10 (7)	3.88	3.8 - 4.04	---	3.88 ± 0.09 (5) ISE
F	%	---	---	---	---	---	4.04 (1) CPAA
F	%	---	---	---	---	---	3.82 (1) COLOR
Fe	ug/g	6990	7340 (1)	---	---	7340 (1)	---
Hg	ng/g	---	57.5 (1)	---	---	---	57.5 (1) AA
K	ug/g	830	---	---	---	---	---
Mg	ug/g	1600	1400 (1)	---	---	1400 (1)	---
Mn	ug/g	150	160 (1)	---	---	160 (1)	---
Na	ug/g	3000	---	---	---	---	---
P	%	15	---	---	---	---	---
Pb	ug/g	---	9.3 (1)	---	---	---	9.3 (1) AA
S	ug/g	---	2900 (1)	---	---	---	2900 (1) CB
Ti	ug/g	720	720 (1)	---	---	720 (1)	---
U	ug/g	---	110 (1)	---	---	---	110 (1) COLOR

TABLE 120A-2: INDIVIDUAL DATA FOR NBS SRM 120A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (ug/g)				
4500			ICPES	80BRE 01
Be (ug/g)				
1.88			AA	83TER 01
C (%)				
1.04			CB	78TER 01
Ca (%)				
36.02			TITR	80HIT 02
36.1			ICPES	80BRE 01
Cd (ug/g)				
11.8			AA	84TER 01
F (%)				
3.8		11	ISE	69EDM 01
3.8	0.1		ISE	77HOP 01
3.82	0.05		COLOR	83CHA 02
3.88		11	ISE	69EDM 01
3.93		11	ISE	71PET 01
4.01		11	ISE	71PET 01
4.04			CPAA	85ROE 01
Fe (ug/g)				
7340			ICPES	80BRE 01
Hg (ng/g)				
57.5	3.6		FAA	82FLA 01
Mg (ug/g)				
1400			ICPES	80BRE 01
Mn (ug/g)				
160			ICPES	80BRE 01
Pb (ug/g)				
9.3			AA	84TER 01
S (ug/g)				
2900			CB	78TER 01
Ti (ug/g)				
720			ICPES	80BRE 01
U (ug/g)				
110	10		COLOR	81OGU 01

TABLE 120B-1: COMPILED DATA FOR NBS SRM 120B PHOSPHATE ROCK (revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	AA Mean (n)	NAA Mean (n)	ICPES Mean ± SD (n)	OTHER METHODS Mean (n) Method
Ag	ug/g	---	5 (1)	---	---	---	---	5 (1)	---
Al	ug/g	5600	5790 ± 350 (8)	5980	5100 - 6000	5100 (1)	---	5880 ± 240 (6)	6000 (1) TCGS
As	ug/g	---	5.52 (1)	---	---	5.52 (1)	---	---	---
Au	ug/g	---	< 3	---	---	---	---	< 3	---
Ba	ug/g	---	61 (1)	---	---	---	---	61 (1)	---
Be	ug/g	---	2.86 (2)	---	2.82 - 2.9	2.82 (1)	---	2.9 (1)	---
Bi	ng/g	---	197 (1)	---	---	197 (1)	---	---	---
C	%	---	1.39 (2)	---	0.983 - 1.8	---	---	---	1.8 (1) SIMS
C	%	---	---	---	---	---	---	---	0.983 (1) CB
C-inorg	ug/g	7600	---	---	---	---	---	---	---
Ca	%	35.32	34.4 ± 1.1 (9)	35.06	32.7 - 35.41	33.98 (1)	---	35.0 ± 0.6 (6)	32.7 (1) TCGS
Cd	ug/g	18	22 ± 3 (3)	22	20.1 - 25.3	22.7 (2)	---	22 (1)	---
Ce	ug/g	---	115 ± 14 (3)	118	100 - 128	---	100 (1)	123 (2)	---
Co	ug/g	---	2.85 (2)	---	2.7 - 3	---	2.7 (1)	.3 (1)	---
Cr	ug/g	---	59.6 (2)	---	56 - 63.1	---	56 (1)	63.1 (1)	---
Cu	ug/g	---	9.95 (2)	---	8.6 - 11.3	11.3 (1)	---	8.6 (1)	---
Dy	ug/g	---	17.2 (2)	---	17 - 17.3	---	---	17.15 (2)	---
Er	ug/g	---	11.7 (2)	---	11.4 - 12	---	---	11.7 (2)	---
Eu	ug/g	---	3.6 ± 0.2 (3)	3.5	3.5 - 3.89	---	3.5 (1)	3.7 (2)	---
F	%	3.84	3.89 ± 0.10 (5)	3.89	3.78 - 4.04	---	3.8 (2)	---	3.93 (1) CPAA
F	%	---	---	---	---	---	---	---	4.04 (1) ISE
F	%	---	---	---	---	---	---	---	3.89 (1) IC
Fe	ug/g	7700	7350 ± 480 (12)	7400	6570 - 7970	7214 (2)	7135 (2)	7350 ± 350 (6)	7400 (1) TCGS
Gd	ug/g	---	18.9 ± 1.8 (3)	18	17.8 - 21	---	---	18.9 ± 1.8 (3)	---
Hf	ug/g	---	2 (1)	---	---	---	2 (1)	---	---
Ho	ug/g	---	3.92 (2)	---	3.8 - 4.03	---	---	3.92 (2)	---
K	ug/g	1000	705 ± 91 (4)	660	600 - 800	800 (1)	---	600 (1)	760 (1) SIMS
La	ug/g	---	88 ± 6 (4)	89	79 - 92.8	---	79 (1)	91 ± 2 (3)	---
Li	ug/g	---	< 2	---	---	---	---	< 2	---
Lu	ug/g	---	1.70 ± 0.10 (3)	1.71	1.6 - 1.8	---	1.8 (1)	1.66 (2)	---

TABLE 120B-1: COMPILED DATA FOR NBS SRM 120B PHOSPHATE ROCK (cont.)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	AA Mean (n)	NAA Mean (n)	ICPES Mean ± SD (n)	OTHER METHODS Mean (n) Method
Mg	ug/g	1700	1695 ± 90 (7)	1700	1600 - 1870	1600 (1)	---	1710 ± 90 (6)	---
Mn	ug/g	250	244 ± 12 (4)	240	230 - 260	243 (2)	---	245 (2)	---
Mo	ug/g	---	< 5	---	---	---	---	< 5	---
Na	ug/g	2600	2660 ± 260 (4)	2630	2300 - 2900	2300 (1)	---	2630 (1)	2800 (1) TCGS
Na	ug/g	---	---	---	---	---	---	---	2900 (1) SIMS
Nd	ug/g	---	75 ± 6 (3)	77	68 - 79.5	---	68 (1)	78.25 (2)	---
Ni	ug/g	---	17 ± 6 (3)	15.4	12 - 22.9	22.9 (1)	12 (1)	15.4 (1)	---
O	%	---	36 (1)	---	---	---	---	---	36 (1) 14NAA
P	%	15.07	15.06 ± 0.18 (7)	15.12	14.7 - 15.21	---	---	15.12 ± 0.10 (6)	14.7 (1) TCGS
Pb	ug/g	---	24 ± 10 (3)	25	13.1 - 32.7	22.9 (2)	---	25 (1)	---
Pr	ug/g	---	17.4 (2)	---	17 - 17.9	---	---	17.45 (2)	---
Ra-226	pCi/g	---	43.3 (1)	---	---	---	---	---	43.3 (1) GAMMA
S	ug/g	---	2200 (1)	---	---	---	---	---	---
Sb	ug/g	---	5.81 (2)	---	1.62 - 10	1.62 (1)	---	10 (1)	---
Sc	ug/g	---	6.4 (1)	---	---	---	6.4 (1)	---	---
Se	ug/g	---	< 30	---	---	---	---	< 30	---
Si	%	2.18	2.22 ± 0.12 (10)	2.21	2.01 - 2.41	2.31 (2)	2.12 (1)	2.24 ± 0.08 (5)	2.19 (1) TCGS
Sm	ug/g	---	23 ± 13 (3)	16	15.8 - 38	---	---	23 ± 13 (3)	---
Sn	ug/g	---	0.41 (1)	---	---	0.41 (1)	---	---	---
Sr	ug/g	---	705 (1)	---	---	---	---	705 (1)	---
Ta	ng/g	---	200 (1)	---	---	---	200 (1)	---	---
Tb	ug/g	---	2 (1)	---	---	---	2 (1)	---	---
Th	ug/g	---	8.0 ± 0.9 (3)	7.9	7.2 - 9.05	---	7.2 (1)	---	8.475 (2) AS
Ti	ug/g	900	870 ± 100 (5)	950	740 - 950	---	780 (1)	880 ± 120 (3)	950 (1) TCGS
Tm	ug/g	---	1.1 (1)	---	---	---	1.1 (1)	---	---
U	ug/g	128.4 ± 0.5	132 ± 5 (5)	130.25	125.7 - 140	---	132.85 (2)	130.25 (1)	131 (2) AS
U-238	pCi/g	---	42.8 (1)	---	---	---	---	---	42.8 (1) GAMMA
V	ug/g	---	170 ± 100 (3)	120	103 - 280	280 (1)	---	111.5 (2)	---
Y	ug/g	---	172 (1)	---	---	---	---	172 (1)	---
Yb	ug/g	---	10.9 ± 1.2 (4)	10.2	10 - 12.7	---	10.2 (1)	11.2 ± 1.4 (3)	---
Zn	ug/g	---	117 (2)	---	107 - 127	107 (1)	---	127 (1)	---
Zr	ug/g	---	12 (1)	---	---	---	---	12 (1)	---

TABLE 120B-2: INDIVIDUAL DATA FOR NBS SRM 120B (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ag (ug/g)				
5			ICPES	81CHU 01
Al (ug/g)				
5100	100		AA	82JEN 01
5400	500		ICPES	82JEN 01
5870	20		ICPES	81CHU 01
5980		11	ICPES	83HOF 01
6000		35	TCGS	78GLA 04
6000		11	ICPES	84HOF 01
6000	480	11	ICPES	84HOF 01
6000	500	11	ICPES	83HOF 01
7780			EXRF	80DAL 01
8500			SIMS	78MOR 01
As (ug/g)				
<	5	L	ICPES	81CHU 01
5.52			HAA	84TER 04
Au (ug/g)				
<	3	L	ICPES	81CHU 01
Ba (ug/g)				
61	1.2		ICPES	81CHU 01
Be (ug/g)				
2.82			AA	82TER 02
2.82		D	AA	83TER 01
2.9	0.06		ICPES	81CHU 01
Bi (ng/g)				
<	25000	L	ICPES	81CHU 01
197			HAA	84TER 02
197		D	FAA	84TER 03
C (%)				
0.983			CB	77TIL 01
1.8			SIMS	78MOR 01

Conc	Uncer	Com	Method	Reference
Ca (%)				
17.8			SIMS	78MOR 01
32.7		35	TCGS	78GLA 04
33			EXRF	80DAL 01
33.78	2.07		ICPES	82JEN 01
33.98	0.72		AA	82JEN 01
35.06	1.16		ICPES	81CHU 01
35.24		11	ICPES	83HOF 01
35.24		11	ICPES	84HOF 01
35.41	0.06	11	ICPES	84HOF 01
35.41	0.06	11	ICPES	83HOF 01
Cd (ug/g)				
20.1			AA	84TER 01
22	10		ICPES	81CHU 01
25.3			AA	76KRI 03
Ce (ug/g)				
100			ITNA	85POT 02
118			ICPES	84MCA 01
128	3		ICPES	85JAR 02
182	3.6		ICPES	81CHU 01
Co (ug/g)				
2.7			ITNA	85POT 02
3	1		ICPES	81CHU 01
Cr (ug/g)				
56			ITNA	85POT 02
63.1	1.9		ICPES	81CHU 01
Cu (ug/g)				
8.6	1		ICPES	81CHU 01
11.3			AA	76KRI 03
Dy (ug/g)				
17			ICPES	84MCA 01
17.3	0.2		ICPES	85JAR 02
Er (ug/g)				
11.4	0.1		ICPES	85JAR 02
12			ICPES	84MCA 01

TABLE 120B-2: INDIVIDUAL DATA FOR NBS SRM 120B (cont.)

Conc	Uncer	Com	Method	Reference
Eu (ug/g)				
3.5			ITNA	85POT 02
3.5			ICPES	84MCA 01
3.89	0.07		ICPES	85JAR 02
4.8	1		ICPES	81CHU 01
F (%)				
3.78	0.07		NAA	80NOR 01
3.82		35	IENA	79GLA 03
3.89	0.21		IC	82JEN 01
3.93	0.09		CPAA	84HAN 01
4.04	0.47		ISE	82JEN 01
Fe (ug/g)				
3200			SIMS	78MOR 01
6570			ITNA	85POT 02
6600	200		AA	82JEN 01
6990		11	ICPES	83HOF 01
7000		11	ICPES	84HOF 01
7200	800		ICPES	82JEN 01
7400		35	TCGS	78GLA 04
7500	300	11	ICPES	83HOF 01
7500	350	11	ICPES	84HOF 01
7700		35	IENA	79GLA 03
7827			AA	76KRI 03
7900	200		ICPES	81CHU 01
7970			EXRF	80DAL 01
Gd (ug/g)				
17.8	0.3		ICPES	85JAR 02
18			ICPES	84MCA 01
21	0.6		ICPES	81CHU 01
Hf (ug/g)				
2			ITNA	85POT 02
Ho (ug/g)				
3.8			ICPES	84MCA 01
4.03	0.04		ICPES	85JAR 02

Conc	Uncer	Com	Method	Reference
K (ug/g)				
110		35	TCGS	78GLA 04
600	200		ICPES	82JEN 01
660			EXRF	80DAL 01
760			SIMS	78MOR 01
800	100		AA	82JEN 01
1170	25		ICPES	81CHU 01
La (ug/g)				
79			ITNA	85POT 02
89	4		ICPES	81CHU 01
90			ICPES	84MCA 01
92.8	1.6		ICPES	85JAR 02
Li (ug/g)				
<	2	L	ICPES	81CHU 01
Lu (ug/g)				
1.6			ICPES	84MCA 01
1.71	0.05		ICPES	85JAR 02
1.8			ITNA	85POT 02
Mg (ug/g)				
51		35	TCGS	78GLA 04
1600	100		ICPES	82JEN 01
1600	100		AA	82JEN 01
1700		11	ICPES	84HOF 01
1700		11	ICPES	83HOF 01
1700	60	11	ICPES	84HOF 01
1700	100	11	ICPES	83HOF 01
1870	60		ICPES	81CHU 01
2800			SIMS	78MOR 01
Mn (ug/g)				
130			SIMS	78MOR 01
150			EXRF	80DAL 01
230	15		ICPES	82JEN 01
240	20		AA	82JEN 01
246			AA	76KRI 03
260	7.8		ICPES	81CHU 01
Mo (ug/g)				
<	5	L	ICPES	81CHU 01

TABLE 120B-2: INDIVIDUAL DATA FOR NBS SRM 120B (cont.)

Conc	Uncer	Com	Method	Reference
Na (ug/g)				
2300	100		AA	82JEN 01
2630	70		ICPES	81CHU 01
2800		35	TCGS	78GLA 04
2900			SIMS	78MOR 01
Nd (ug/g)				
68			ITNA	85POT 02
77			ICPES	84MCA 01
79.5	0.9		ICPES	85JAR 02
127	25		ICPES	81CHU 01
Ni (ug/g)				
12		35	IENA	79GLA 03
15.4	1		ICPES	81CHU 01
22.9			AA	76KRI 03
O (%)				
36	0.5		14NAA	80NOR 01
P (%)				
12.97	0.79		IC	82JEN 01
13.5			SIMS	78MOR 01
14.7		35	TCGS	78GLA 04
14.96	0.14	11	ICPES	84HOF 01
15.04	0.14	11	ICPES	83HOF 01
15.12		11	ICPES	84HOF 01
15.19	1.23		ICPES	82JEN 01
15.2		11	ICPES	83HOF 01
15.21	0.38		ICPES	81CHU 01
15.9			EXRF	80DAL 01
Pb (ug/g)				
13.1			AA	84TER 01
25	5		ICPES	81CHU 01
32.7			AA	76KRI 03
Pr (ug/g)				
17			ICPES	84MCA 01
17.9	0.2		ICPES	85JAR 02
Ra-226 (pCi/g)				
43.3	0.6		GAMMA	83KIM 01

Conc	Uncer	Com	Method	Reference
S (ug/g)				
2200			EXRF	80DAL 01
Sb (ug/g)				
1.62			HAA	84TER 04
10			ICPES	81CHU 01
Sc (ug/g)				
6.4			ITNA	85POT 02
Se (ug/g)				
<	30	L	ICPES	81CHU 01
Si (%)				
2.01			EXRF	80DAL 01
2.12		35	IENA	79GLA 03
2.12	0.19		ICPES	82JEN 01
2.19		35	TCGS	78GLA 04
2.21	0.01		AA	82KIS 01
2.23	0.03	11	ICPES	84HOF 01
2.23	0.03	11	ICPES	83HOF 01
2.32		11	ICPES	84HOF 01
2.32		11	ICPES	83HOF 01
2.41	0.24		AA	82JEN 01
Sm (ug/g)				
15.8	0.2		ICPES	85JAR 02
16			ICPES	84MCA 01
38	1.9		ICPES	81CHU 01
Sn (ug/g)				
<	3	L	ICPES	81CHU 01
0.41	0.05		FAA	85TER 01
Sr (ug/g)				
705	14		ICPES	81CHU 01
Ta (ng/g)				
200			ITNA	85POT 02
Tb (ug/g)				
2			ITNA	85POT 02

TABLE 120B-2: INDIVIDUAL DATA FOR NBS SRM 120B (cont.)

Conc	Uncer	Com	Method	Reference
Th (ug/g)				
<	25	L	ICPES	81CHU 01
7.2			ITNA	85POT 02
7.9	0.8		AS	82ROE 01
9.05	0.4		AS	82THO 02
Ti (ug/g)				
590			SIMS	78MOR 01
740	20		ICPES	81CHU 01
780		35	IENA	79GLA 03
950		35	TCGS	78GLA 04
950	10	11	ICPES	83HOF 01
950	10		ICPES	84HOF 01
1200			EXRF	80DAL 01
Tm (ug/g)				
1.1			ITNA	85POT 02
U (ug/g)				
125.7	0.6		DNA	86GAU 01
130	5		AS	82ROE 01
130.25	1.5		ICPES	83NOR 01
132	2		AS	82THO 02
140			ITNA	85POT 02

Conc	Uncer	Com	Method	Reference
U-238 (pCi/g)				
42.8	0.8		GAMMA	83KIM 01
V (ug/g)				
103	3.1		ICPES	81CHU 01
120	10		ICPES	82JEN 01
280	40		AA	82JEN 01
Y (ug/g)				
172	5		ICPES	85JAR 02
Yb (ug/g)				
10			ICPES	84MCA 01
10.2			ITNA	85POT 02
10.8	0.2		ICPES	85JAR 02
12.7	0.4		ICPES	81CHU 01
Zn (ug/g)				
107			AA	76KRI 03
127	3.9		ICPES	81CHU 01
Zr (ug/g)				
12	1.2		ICPES	81CHU 01

TABLE 181-1: COMPILED DATA FOR NBS SRM 181 LITHIUM ORE (SPODUMENE)
(revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS	METHOD
Bi	ng/g	---	892 (1)	AA
K	ug/g	2500	---	---
Li	%	2.97 ± 0.02	---	---
Na	ug/g	5900	---	---

TABLE 182-1: COMPILED DATA FOR NBS SRM 182 LITHIUM ORE (PETALITE)
(revised 3/1/86)

ELEMENT	UNITS	NBS
K	ug/g	830
Li	%	2.02 ± 0.02
Na	ug/g	3000
Rb	ug/g	275

TABLE 183-1: COMPILED DATA FOR NBS SRM 183 LITHIUM ORE (LEPIDOLITE)
(revised 3/1/86)

ELEMENT	UNITS	NBS
Cs	ug/g	2800
K	%	6.6
Li	%	1.92 ± 0.02
Na	ug/g	1500
Rb	%	3.2

TABLE 181-2: INDIVIDUAL DATA FOR NBS SRM 181
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Bi (ng/g)				
892			FAA	84TER 03

TABLE 278-1: COMPILED DATA FOR NBS SRM 278 OBSIDIAN ROCK (revised 3/1/86)

ELE	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	NAA Mean ± SD (n)	ICPES Mean (n)	XRF Mean (n)	OTHER METHODS Mean ± SD (n) Method
Al	%	7.49 ± 0.08	7.61 ± 0.13 (7)	7.56	7.43 - 7.8	7.52 (2)	7.78 (1)	7.56 (1)	7.63 ± 0.14 (3) TCGS
As	ug/g	---	4.9 ± 0.2 (3)	5.06	4.68 - 5.1	4.9 ± 0.2 (3)	---	---	---
Au	ng/g	---	2.12 (2)	---	1.6 - 2.64	2.12 (2)	---	---	---
B	ug/g	25	25 ± 2 (6)	24.9	21 - 27.9	---	---	---	25.6 ± 1.4 (5) TCGS
B	ug/g	---	---	---	---	---	---	---	21 (1) OES
Ba	ug/g	1140	1000 ± 90 (5)	1050	885 - 1080	1019 ± 90 (4)	928 (1)	---	---
Be	ug/g	---	1.9 (2)	---	1.4 - 2.4	---	2.4 (1)	---	1.4 (1) OES
Br	ug/g	---	2.8 ± 0.2 (3)	2.65	2.61 - 2.99	2.75 ± 0.21 (3)	---	---	---
C-I	ug/g	27	---	---	---	---	---	---	---
C-T	ug/g	500	---	---	---	---	---	---	---
Ca	ug/g	7030 ± 20	7180 ± 170 (7)	7100	7000 - 7500	7250 (2)	7200 (1)	7080 (1)	7170 ± 110 (3) TCGS
Cd	ng/g	---	180 (2)	---	180 - 180	---	---	---	180 (2) TCGS
Ce	ug/g	62.2	60 ± 5 (8)	56.5	54.4 - 68	60 ± 5 (7)	61 (1)	---	---
Cl	ug/g	---	622 ± 14 (4)	610	610 - 640	---	---	---	620 ± 17 (3) TCGS
Cl	ug/g	---	---	---	---	---	---	---	627 (1) ISE
Co	ug/g	1.5	2.1 ± 0.3 (6)	2	1.85 - 2.7	2.1 ± 0.3 (5)	2 (1)	---	---
Cr	ug/g	6.1	6.4 ± 0.9 (5)	6.42	5 - 7.5	6.8 ± 0.5 (4)	5 (1)	---	---
Cs	ug/g	5.5	5.1 ± 0.2 (7)	5.12	4.9 - 5.46	5.1 ± 0.2 (7)	---	---	---
Cu	ug/g	5.9 ± 0.2	< 5	---	---	---	---	< 5	---
Dy	ug/g	---	6.5 ± 0.3 (3)	6.51	6.2 - 6.8	6.36 (2)	6.8 (1)	---	---
Er	ug/g	---	3.9 (2)	---	3.66 - 4.1	3.66 (1)	4.1 (1)	---	---
Eu	ng/g	840	800 ± 25 (8)	790	764 - 830	800 ± 24 (7)	770 (1)	---	---
F	ug/g	500	---	---	---	---	---	---	---
Fe	%	1.43 ± 0.02	1.46 ± 0.08 (9)	1.47	1.32 - 1.55	1.54 ± 0.02 (3)	1.47 (1)	1.45 (1)	1.41 ± 0.10 (4) TCGS
Fe2O3	%	---	0.49 (1)	---	---	---	---	---	0.49 (1) CALC
FeO	%	1.36 ± 0.02	1.38 (2)	---	1.35 - 1.42	---	---	---	1.42 (1) COLOR
FeO	%	---	---	---	---	---	---	---	1.35 (1) TITR
Ga	ug/g	---	11 (2)	---	10 - 12.47	11 (2)	22 (1)	---	---
Gd	ug/g	5.3	5.6 ± 0.4 (9)	5.5	4.96 - 6.1	5.3 ± 0.7 (3)	6.1 (1)	---	5.49 ± 0.38 (6) TCGS
H	ug/g	---	660 ± 200 (3)	550	530 - 890	---	---	---	660 ± 200 (3) TCGS
H2O+	%	---	0.30 (1)	---	---	---	---	---	0.3 (1) COUL
H2O-	%	---	0.05 (1)	---	---	---	---	---	0.05 (1) COUL
Hf	ug/g	8.4	8.76 ± 0.14 (3)	8.82	8.6 - 8.86	8.76 ± 0.14 (3)	---	---	---
Ho	ug/g	---	1.31 ± 0.16 (3)	1.23	1.2 - 1.5	1.22 (2)	1.5 (1)	---	---

TABLE 278-1 COMPILED DATA FOR NBS SRM 278 OBSIDIAN ROCK (cont.)

ELE	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	NAA Mean ± SD (n)	ICPES Mean (n)	XRF Mean (n)	OTHER METHODS Mean ± SD (n) Method
In	ng/g	---	43.6 (1)	---	---	43.6 (1)	---	---	---
K	%	3.45 ± 0.02	3.38 ± 0.10 (8)	3.34	3.28 - 3.58	3.35 (2)	3.34 (1)	3.4 (1)	3.41 ± 0.13 (4) TCGS
La	ug/g	---	33 ± 4 (8)	33	27.95 - 37.8	33 ± 4 (7)	31 (1)	24 (1)	---
Li	ug/g	---	47 (1)	---	---	---	47 (1)	---	---
Lu	ng/g	730	820 ± 95 (7)	820	710 - 947	840 ± 90 (6)	710 (1)	---	---
Mg	ug/g	1400	1485 (2)	---	1430 - 1540	---	1430 (1)	1540 (1)	---
Mn	ug/g	400 ± 15	390 ± 21 (9)	382	367 - 430	386 ± 21 (4)	373 (1)	395 (1)	397 ± 28 (3) TCGS
Mo	ug/g	---	3.2 ± 1.0 (3)	3.73	2 - 3.73	3.73 (2)	2 (1)	---	---
Na	%	3.59 ± 0.04	3.50 ± 0.04 (7)	3.49	3.44 - 3.56	3.45 ± 0.11 (4)	3.44 (1)	3.56 (1)	3.51 (2) TCGS
Nb	ug/g	---	16 (2)	---	12.7 - 18.4	---	12.7 (1)	18.4 (1)	---
Nd	ug/g	---	29 ± 2 (7)	29.5	26 - 33.5	29 ± 3 (4)	28.6 (1)	---	30 (2) TCGS
Ni	ug/g	3.6 ± 0.3	12 (2)	---	4 - 19	---	4 (1)	19 (1)	---
P	ug/g	160 ± 13	140 (2)	---	110 - 170	---	170 (1)	110 (1)	---
Pb	ug/g	16.4 ± 0.2	17 (2)	---	16.22 - 18	---	18 (1)	---	16.22 (1) IDMS
Pr	ug/g	---	8 (2)	---	7.48 - 8.6	7.48 (1)	8.6 (1)	---	---
Rb	ug/g	127.5 ± 0.3	133 ± 6 (6)	130	128.4 - 143.17	135 ± 6 (4)	---	128.7 (2)	---
Sb	ug/g	1.5	1.72 ± 0.13 (5)	1.7	1.59 - 1.9	1.72 ± 0.13 (5)	---	---	---
Sc	ug/g	5.1	5.1 ± 0.5 (8)	5.1	4.16 - 6	5.16 ± 0.14 (6)	6 (1)	---	---
Si	%	34.11 ± 0.06	33.4 ± 0.6 (4)	33.1	33.1 - 34.25	---	---	34.25 (1)	33.13 ± 0.06 (3) TCGS
Sm	ug/g	5.7	5.8 ± 0.2 (11)	5.8	5.45 - 6.2	5.81 ± 0.13 (5)	6.8 (1)	---	5.8 ± 0.29 (6) TCGS
Sr	ug/g	63.5 ± 0.1	61 ± 3 (4)	60	58 - 66	58 (1)	60 (1)	63.9 (2)	---
Ta	ug/g	1.2	1.28 ± 0.06 (4)	1.23	1.23 - 1.34	1.28 ± 0.06 (4)	---	---	---
Tb	ug/g	1	1.10 ± 0.16 (6)	1.12	0.8 - 1.23	1.10 ± 0.16 (6)	---	---	---
Th	ug/g	12.4 ± 0.3	12.8 ± 0.4 (7)	12.8	12.27 - 13.2	12.7 ± 0.4 (6)	13 (1)	---	---
Ti	ug/g	1470 ± 40	1420 ± 70 (6)	1420	1330 - 1500	---	1480 (1)	1420 (1)	1400 ± 90 (4) TCGS
Tl	ng/g	540 ± 40	---	---	---	---	---	---	---
Tm	ng/g	---	340 ± 50 (3)	330	301 - 400	340 ± 50 (3)	500 (1)	---	---
U	ug/g	4.58 ± 0.04	4.53 ± 0.23 (10)	4.51	4.20 - 4.96	4.58 ± 0.23 (8)	---	---	4.51 (1) IDMS
U	ug/g	---	---	---	---	---	---	---	4.21 (1) FLUOR
V	ug/g	---	15 ± 8 (3)	12	8 - 24	12 (1)	8 (1)	24 (1)	---
Y	ug/g	---	41 ± 3 (3)	41	38.3 - 44.5	---	38.3 (1)	42.75 (2)	---
Yb	ug/g	4.5	4.5 ± 0.6 (8)	4.68	3.58 - 5.09	4.5 ± 0.6 (7)	4.68 (1)	---	---
Zn	ug/g	55	54 ± 4 (4)	54	47.8 - 57.4	55.7 (2)	47.8 (1)	57 (1)	---
Zr	ug/g	---	295 ± 11 (5)	290	285 - 311	298 (2)	290 (1)	295.4 (2)	---

TABLE 278-2: INDIVIDUAL DATA FOR NBS SRM 278 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (%)				
7.43	0.57		ITNA	82GRA 01
7.55	0.08		TCGS	83AND 01
7.55	0.08		TCGS	85AND 01
7.56	0.06		WXRF	85GLA 01
7.62	0.11		ITNA	85GLA 01
7.78	0.08		ICPES	83CRO 01
7.8	0.2		TCGS	82GRA 01
As (ug/g)				
4.68	0.13		ITNA	81AHM 01
5.06	1.29		ITNA	82GRA 01
5.1	0.88		ITNA	82VOG 01
Au (ng/g)				
1.6	0.8		ITNA	82GRA 01
2.64	0.52		ITNA	82VOG 01
B (ug/g)				
21			OES	83MIL 01
24.1	0.4		TCGS	83AND 01
24.9	0.5		TCGS	82VOG 01
25.2	0.4		TCGS	82GRA 01
26	3		TCGS	84GLA 01
27.9	0.4		TCGS	85AND 01
Ba (ug/g)				
600	160		WXRF	85GLA 01
885	54		ITNA	81AHM 01
928	9		ICPES	83CRO 01
1050	40		ITNA	85GLA 01
1060	40		ITNA	82VOG 01
1080	58		ITNA	82GRA 01
Be (ug/g)				
1.4			OES	83MIL 01
2.4	0.1		ICPES	83CRO 01
Br (ug/g)				
2.61	0.62		ITNA	82GRA 01
2.65	0.2		ITNA	81AHM 01
2.99	1.01		ITNA	82VOG 01

Conc	Uncer	Com	Method	Reference
Ca (ug/g)				
6000	1000		TCGS	82GRA 01
7000	570		ITNA	85GLA 01
7080	50		WXRF	85GLA 01
7100	300		TCGS	85AND 01
7100	300		TCGS	83AND 01
7200	100		ICPES	83CRO 01
7300	300		TCGS	82VOG 01
7500	1200		ITNA	82GRA 01
Cd (ng/g)				
180	60		TCGS	85AND 01
180	60		TCGS	83AND 01
Ce (ug/g)				
54.4	2.2		ITNA	84ODD 01
55.8	0.3		RTNA	84ODD 01
56.5	1.9		ITNA	81AHM 01
56.5	2.9		ITNA	80AHM 01
59.4	6.8		ITNA	82GRA 01
61	1		ICPES	83CRO 01
66.5	9.3		ITNA	82VOG 01
68	1		ITNA	85GLA 01
90	30		WXRF	85GLA 01
Cl (ug/g)				
610	7		TCGS	85AND 01
610	7		TCGS	83AND 01
627	14		ISE	86ELS 01
640	90		TCGS	82GRA 01
Co (ug/g)				
1.85	0.18		ITNA	82GRA 01
1.89	0.31		ITNA	82VOG 01
2	1		ICPES	83CRO 01
2.04	0.22		ITNA	81AHM 01
2.08	0.1		ITNA	85GLA 01
2.6	2.7		WXRF	85GLA 01
2.7	0.2		ITNA	84GLA 11
Cr (ug/g)				
2	7		WXRF	85GLA 01
5	0.5		ICPES	83CRO 01
6.34	0.93		ITNA	82GRA 01
6.42	0.28		ITNA	82VOG 01
6.79	0.44		ITNA	81AHM 01
7.5	1.2		ITNA	86GAU 01

TABLE 278-2: INDIVIDUAL DATA FOR NBS SRM 278 (cont.)

Conc	Uncer	Com	Method	Reference
Cs (ug/g)				
4.9			ITNA	86GAU 01
4.91	0.14		ITNA	84GLA 11
4.92	0.34		ITNA	82GRA 01
5.12	0.44		ITNA	81AHM 01
5.3	0.25		ITNA	82VOG 01
5.3	0.7		ITNA	84GLA 02
5.46	0.07		ITNA	85GLA 01
Cu (ug/g)				
<	5		ICPES	83CRO 01
Dy (ug/g)				
6.2	0.1		ITNA	84ODD 01
6.51	0.2		RTNA	84ODD 01
6.8	0.4		ICPES	83CRO 01
Er (ug/g)				
3.66	0.07		RTNA	84ODD 01
4.1	0.3		ICPES	83CRO 01
Eu (ng/g)				
764	56		ITNA	82GRA 01
770	30		ICPES	83CRO 01
780	20		RTNA	84ODD 01
790	40		ITNA	85GLA 01
796	9		ITNA	82VOG 01
820	30		ITNA	80AHM 01
820	30		ITNA	81AHM 01
830	20		ITNA	84ODD 01
Fe (%)				
1.14	0.23		ITNA	81AHM 01
1.32	0.17		TCGS	82GRA 01
1.39	0.05		TCGS	83AND 01
1.39	0.05		TCGS	85AND 01
1.45	0.02		WXRF	85GLA 01
1.47	0.01		ICPES	83CRO 01
1.52	0.05		ITNA	82GRA 01
1.54	0.01		ITNA	82VOG 01
1.55	0.04		ITNA	85GLA 01
1.55	0.06		TCGS	82VOG 01
FE203 (%)				
0.49	0.11		CALC	85GLA 01
FEO (%)				
1.35			TITR	84GOL 01
1.42	0.1		COLOR	85GLA 01
Ga (ug/g)				
10	3		ITNA	82GRA 01
12.47	2.53		ITNA	82VOG 01
22	4		ICPES	83CRO 01
Gd (ug/g)				
4.5			ITNA	82GRA 01
4.96	0.08		TCGS	83AND 01
5.28	0.06		TCGS	82VOG 01
5.34	0.08		TCGS	82GRA 01
5.5	0.5	4	TCGS	85GLA 05
5.65	0.07		ITNA	84ODD 01
5.7	0.03		RTNA	84ODD 01
5.9	0.5	4	TCGS	85GLA 05
5.95	0.08		TCGS	85AND 01
6.1	0.3		ICPES	83CRO 01
37.74	1.5		ITNA	80AHM 01
37.74	1.5		ITNA	81AHM 01
H (ug/g)				
530	45		TCGS	83AND 01
550	50		TCGS	85AND 01
890	120		TCGS	82VOG 01
H2O+ (%)				
0.3	0.02		COUL	85GLA 01
H2O- (%)				
0.05	0.01		COUL	85GLA 01
Hf (ug/g)				
6.41	0.24		ITNA	81AHM 01
8.6	0.2		ITNA	85GLA 01
8.82	0.73		ITNA	82GRA 01
8.86	0.73		ITNA	82VOG 01
Ho (ug/g)				
1.2	0.04		RTNA	84ODD 01
1.23	0.06		ITNA	84ODD 01
1.5	0.1		ICPES	83CRO 01

TABLE 278-2: INDIVIDUAL DATA FOR NBS SRM 278 (cont.)

Conc	Uncer	Com	Method	Reference
In (ng/g)				
43.6	2.7		ITNA	81AHM 01
K (%)				
3.28	0.11		ITNA	85GLA 01
3.31	0.01		TCGS	83AND 01
3.31	0.01		TCGS	85AND 01
3.34	0.03		ICPES	83CRO 01
3.4	0.01		WXRF	85GLA 01
3.42	0.34		ITNA	82GRA 01
3.44	0.08		TCGS	82GRA 01
3.58	0.7		TCGS	82VOG 01
4.23	0.13		ITNA	81AHM 01
La (ug/g)				
24	6		WXRF	85GLA 01
27.59	0.38		ITNA	81AHM 01
27.6	0.4		ITNA	80AHM 01
31	0.7		ICPES	83CRO 01
33	3		ITNA	85GLA 01
35.4	2.5		ITNA	82GRA 01
35.8	1.5		ITNA	82VOG 01
37.6	0.8		ITNA	84ODD 01
37.8	0.8		RTNA	84ODD 01
Li (ug/g)				
47	1		ICPES	83CRO 01
Lu (ng/g)				
710	10		ICPES	83CRO 01
740	50		ITNA	80AHM 01
745	310		ITNA	81AHM 01
820	39		ITNA	82VOG 01
836	50		ITNA	82GRA 01
934	2		RTNA	84ODD 01
947	2		ITNA	84ODD 01
Mg (ug/g)				
<	2400		ITNA	85GLA 01
1430	20		ICPES	83CRO 01
1540	30		WXRF	85GLA 01

Conc	Uncer	Com	Method	Reference
Mn (ug/g)				
367	15		ITNA	82VOG 01
370	15		ITNA	85GLA 01
373	3		ICPES	83CRO 01
380	50		TCGS	83AND 01
382	52		TCGS	85AND 01
395	40		WXRF	85GLA 01
400	50		ITNA	82GRA 01
409	15		ITNA	81AHM 01
430	70		TCGS	82GRA 01
Mo (ug/g)				
2	1		ICPES	83CRO 01
3.73	0.52		ITNA	82VOG 01
3.73	0.52		ITNA	82GRA 01
Na (%)				
2.6	0.2		TCGS	82GRA 01
3.3	0.4		ITNA	82VOG 01
3.44	0.02		ICPES	83CRO 01
3.46	0.26		ITNA	82GRA 01
3.49	0.01		ITNA	85GAU 04
3.51	0.05		TCGS	85AND 01
3.51	0.05		TCGS	83AND 01
3.56	0.02		WXRF	85GLA 01
3.56	0.03		ITNA	85GLA 01
3.9	0.23		ITNA	81AHM 01
Nb (ug/g)				
12.7	0.9		ICPES	83CRO 01
18.4	1.5		WXRF	84KYL 01
Nd (ug/g)				
26	4		ITNA	85GLA 01
28.2	1		ITNA	82GRA 01
28.6	0.9		ICPES	83CRO 01
29.5	0.3		ITNA	84ODD 01
30	5		TCGS	83AND 01
30	5		TCGS	85AND 01
33.5	0.02		RTNA	84ODD 01
Ni (ug/g)				
4	2		ICPES	83CRO 01
19	50		WXRF	85GLA 01

TABLE 278-2: INDIVIDUAL DATA FOR NBS SRM 278 (cont.)

Conc	Uncer	Com	Method	Reference
P (ug/g)				
110	20		WXRF	85GLA 01
170	10		ICPES	83CRO 01
Pb (ug/g)				
16.22	0.037		IDMS	86FIS 01
18	3		ICPES	83CRO 01
Pr (ug/g)				
7.48	0.08		RTNA	84ODD 01
8.6	0.8		ICPES	83CRO 01
Rb (ug/g)				
128.4	1		WXRF	84KYL 01
129	7		WXRF	85GLA 01
130	5		ITNA	85GLA 01
130	12		ITNA	82GRA 01
138	10		ITNA	82VOG 01
143.17	2.63		ITNA	81AHM 01
Sb (ug/g)				
1.59	0.05		ITNA	82VOG 01
1.61	0.13		ITNA	82GRA 01
1.7	0.4		ITNA	81AHM 01
1.8	0.1		ITNA	85GLA 01
1.9			ITNA	84GLA 02
Sc (ug/g)				
4.16	0.21		ITNA	81AHM 01
5	0.03		ITNA	86GAU 01
5	0.1		ITNA	84GLA 02
5.1	0.07		ITNA	84GLA 11
5.24	0.14		ITNA	82GRA 01
5.3	0.1		ITNA	85GLA 01
5.31	0.05		ITNA	82VOG 01
6	0.5		ICPES	83CRO 01
Si (%)				
33.1	0.3		TCGS	85AND 01
33.1	0.3		TCGS	83AND 01
33.2	0.7		TCGS	82VOG 01
34.25	0.14		WXRF	85GLA 01
36.6	1.3		TCGS	82GRA 01
Sm (ug/g)				
5.45	0.03		TCGS	83AND 01
5.61	0.05		TCGS	82VOG 01
5.66	0.1		TCGS	82GRA 01
5.69	0.62		ITNA	82GRA 01
5.7	0.7		ITNA	82VOG 01
5.8	0.03		RTNA	84ODD 01
5.8	0.6	4	TCGS	85GLA 05
5.85	0.09		ITNA	84ODD 01
6	0.7		ITNA	85GLA 01
6.08	0.03		TCGS	85AND 01
6.2	0.6	4	TCGS	85GLA 05
6.8	0.6		ICPES	83CRO 01
Sr (ug/g)				
58			IENA	85GAU 04
60	3		ICPES	83CRO 01
61.8	1		WXRF	84KYL 01
66	6		WXRF	85GLA 01
Ta (ug/g)				
1.23	0.16		ITNA	82VOG 01
1.23	0.19		ITNA	82GRA 01
1.32	0.18		ITNA	81AHM 01
1.34	0.09		ITNA	85GLA 01
Tb (ug/g)				
0.8	0.02		ITNA	85GLA 01
1.11	0.1		ITNA	84ODD 01
1.12	0.22		ITNA	82VOG 01
1.14	0.1		ITNA	82GRA 01
1.23	0.03		ITNA	81AHM 01
1.23	0.08		ITNA	80AHM 01
1.81	0.03		RTNA	84ODD 01
Th (ug/g)				
12.27	0.77		ITNA	81AHM 01
12.27	0.77		ITNA	80CHA 02
12.7	0.4		ITNA	86GAU 01
12.8	0.3		ITNA	82GRA 01
13	3		ICPES	83CRO 01
13.1	0.2		ITNA	82VOG 01
13.2	0.4		ITNA	85GLA 01

TABLE 278-2: INDIVIDUAL DATA FOR NBS SRM 278 (cont.)

Conc	Uncer	Com	Method	Reference
Ti (ug/g)				
1330	60		TCGS	85AND 01
1330	60		TCGS	83AND 01
1420	30		WXRF	85GLA 01
1450	90		TCGS	82GRA 01
1480	10		ICPES	83CRO 01
1500	40		TCGS	82VOG 01
Tm (ng/g)				
301	20		ITNA	81AHM 01
330	30		RTNA	84ODD 01
400	20		ITNA	84ODD 01
500	100		ICPES	83CRO 01
U (ug/g)				
4.204	0.284		ITNA	81AHM 01
4.21	0.12		FLUOR	86KAN 01
4.51	0.005		IDMS	86FIS 01
4.51	0.05		DNA	85GLA 04
4.51	0.08		DNA	85GLA 01
4.51	0.08		DNA	85GAU 04
4.53	0.12		DNA	86GAU 01
4.58			DNA	84GLA 02
4.82	0.35		ITNA	82GRA 01
4.96	0.33		ITNA	82VOG 01
V (ug/g)				
8	1		ICPES	83CRO 01
12	4		ITNA	85GLA 01
24	4		WXRF	85GLA 01
Y (ug/g)				
38.3	4		ICPES	83CRO 01
41	2		WXRF	85GLA 01
44.5	1		WXRF	84KYL 01
Yb (ug/g)				
3.58	0.25		ITNA	80AHM 01
3.58	0.25		ITNA	81AHM 01
4.54	0.86		ITNA	82GRA 01
4.68	0.05		ICPES	83CRO 01
4.79	0.04		ITNA	84ODD 01
4.8	0.2		ITNA	85GLA 01
5.04	0.08		RTNA	84ODD 01
5.09	0.95		ITNA	82VOG 01

Conc	Uncer	Com	Method	Reference
Zn (ug/g)				
47.8	0.4		ICPES	83CRO 01
54	2.5		ITNA	82GRA 01
57	7		WXRF	85GLA 01
57.4	3.6		ITNA	82VOG 01
Zr (ug/g)				
285	16		ITNA	82GRA 01
288.8	2		WXRF	84KYL 01
290	2		ICPES	83CRO 01
302	9		WXRF	85GLA 01
311	50		ITNA	82VOG 01

TABLE 330-1: COMPILED DATA ON NBS SRM 330 COPPER ORE, MILL HEADS (revised 3/1/86)

ELEMENT	UNITS	NBS
Ag	ug/g	1.51
Au	ng/g	93
Cu	ug/g	8400 ± 100
Mo	ug/g	180 ± 10
Re	ng/g	300 ± 60

TABLE 331-1: COMPILED DATA ON NBS SRM 331 COPPER ORE, MILL TAILS (revised 3/1/86)

ELEMENT	UNITS	NBS
Ag	ng/g	243
Au	ng/g	34
Cu	ug/g	910 ± 10
Mo	ug/g	22 ± 2
Re	ng/g	40 ± 20

TABLE 332-1: COMPILED DATA ON NBS SRM 332 COPPER CONCENTRATE (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS	METHOD
Ag	ug/g	38.7	---	---
Au	ug/g	2.14	---	---
Cu	%	28.4 ± 0.1	---	---
Mo	ug/g	6400 ± 100	---	---
Re	ug/g	10.2 ± 0.2	10.2 (1)	PROBE

TABLE 332-2: INDIVIDUAL DATA FOR NBS SRM 332 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Re (ug/g)				
10.2	1.8		PROBE	85HAS 01

TABLE 333-1: COMPILED DATA ON NBS SRM 333 MOLYBDENUM CONCENTRATE (revised 3/1/86)

ELEMENT	UNITS	NBS
Ag	ug/g	25
Au	ug/g	8.9
Cu	%	1.038 ± 0.01
Mo	%	55.3 ± 0.1
Re	ug/g	870 ± 10

TABLE 610-1: COMPILED DATA FOR NBS SRM 610 TRACE ELEMENTS IN GLASS (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)		MEDIAN	RANGE	METHOD MEANS Mean ± SD (n) Method		
Ag	ug/g	254 ± 10	180	(1)	---	---	180	(1)	NAA
As	ug/g	---	305	(1)	---	---	305	(1)	SSMS
Au	ug/g	25	20	(1)	---	---	20	(1)	NAA
B	ug/g	351	357 ± 9	(5)	358	348 - 368	356 ± 8	(3)	TCGS
B	ug/g	---	---		---	---	358	(2)	ICPES
B-10	atom %	---	19.827	(1)	---	---	19.827	(1)	IDMS
Ba	ug/g	---	638	(1)	---	---	638	(1)	SSMS
Be	ug/g	---	450	(1)	---	---	450	(1)	CPAA
Bi	ug/g	---	405	(1)	---	---	405	(1)	SSMS
Ca	%	8.6	7.64	(1)	---	---	7.64	(1)	SSMS
Cd	ug/g	---	187	(1)	---	---	187	(1)	SSMS
Ce	ug/g	---	318	(1)	---	---	318	(1)	SSMS
Co	ug/g	390	389 ± 22	(9)	390	360 - 420	391 ± 23	(8)	PROBE
Co	ug/g	---	---		---	---	375	(1)	SSMS
Cr	ug/g	---	410 ± 60	(9)	380	340 - 510	420 ± 60	(8)	PROBE
Cr	ug/g	---	---		---	---	371	(1)	SSMS
Cu	ug/g	444 ± 4	380 ± 100	(8)	360	230 - 510	380 ± 100	(8)	PROBE
Fe	ug/g	458 ± 9	460	(1)	---	---	460	(1)	POL
Ga	ug/g	---	481	(1)	---	---	481	(1)	SSMS
Ge	ug/g	---	496	(1)	---	---	496	(1)	SSMS
Hf	ug/g	---	220	(1)	---	---	220	(1)	SSMS
In	ug/g	---	319	(1)	---	---	319	(1)	SSMS
K	ug/g	461	---		---	---	---		
Li	ug/g	---	354	(1)	---	---	354	(1)	CPAA
Mg	ug/g	---	472	(1)	---	---	472	(1)	SSMS
Mn	ug/g	485 ± 10	480 ± 50	(9)	490	391 - 550	495 ± 40	(8)	PROBE
Mn	ug/g	---	---		---	---	391	(1)	SSMS
Mo	ug/g	---	307	(1)	---	---	307	(1)	SSMS
Ni	ug/g	458.7 ± 4	480 ± 50	(8)	470	431 - 550	490 ± 50	(6)	PROBE
Ni	ug/g	---	---		---	---	450	(1)	POL
Ni	ug/g	---	---		---	---	431	(1)	SSMS
Pb	ug/g	426 ± 1	418 ± 17	(4)	425.58	392 - 427	426.2 ± 0.7	(3)	IDMS
Pb	ug/g	---	---		---	---	392	(1)	SSMS
Rb	ug/g	425.7 ± 0.8	425.7	(1)	---	---	425.7	(1)	IDMS
Sb	ug/g	---	387	(1)	---	---	387	(1)	SSMS
Sr	ug/g	515.5 ± 0.5	515.5	(1)	---	---	515.5	(1)	IDMS
Ta	ug/g	---	206	(1)	---	---	206	(1)	SSMS
Te	ug/g	---	259	(1)	---	---	259	(1)	SSMS
Th	ug/g	457.2 ± 1.2	460 ± 7	(3)	457.23	455.4 - 469	456.3	(2)	IDMS
Th	ug/g	---	---		---	---	469	(1)	SSMS
Ti	ug/g	437	490 ± 70	(10)	530	361 - 560	520 ± 50	(8)	PROBE
Ti	ug/g	---	---		---	---	434	(1)	POL
Ti	ug/g	---	---		---	---	361	(1)	SSMS
Tl	ug/g	61.8 ± 2.5	57	(2)	---	52 - 61.8	52	(1)	SSMS
Tl	ug/g	---	---		---	---	61.8	(1)	IDMS
U	ug/g	461.5 ± 1.1	453 ± 22	(7)	461.5	413 - 471	457 ± 23	(3)	NAA
U	ug/g	---	---		---	---	461.4	(2)	IDMS
U	ug/g	---	---		---	---	413	(1)	SSMS
U	ug/g	---	---		---	---	462.8	(1)	NT
U-234	atom %	---	0.0010	(1)	---	---	0.0010	(1)	IDMS
U-235	atom %	0.2376	0.2376	(2)	---	0.2376 - 0.2376	0.2376	(2)	IDMS
U-235/238	ratio	0.0024	0.0025 ± 0.0001	(4)	0.0024	0.0023 - 0.0026	0.0025 ± 0.0001	(4)	NAA
U-236	atom %	---	0.0043	(1)	---	---	0.0043	(1)	IDMS
U-238	atom %	---	99.7571	(1)	---	---	99.7571	(1)	IDMS
V	ug/g	---	490 ± 60	(8)	460	410 - 560	490 ± 60	(8)	PROBE
Zn	ug/g	433	500 ± 140	(6)	500	320 - 650	500 ± 140	(6)	PROBE

TABLE 610-2: INDIVIDUAL DATA FOR NBS SRM 610 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ag (ug/g)				
180	80		ITNA	73SHE 01
As (ug/g)				
305	20		SSMS	74BER 01
Au (ug/g)				
20	2		ITNA	73SHE 01
B (ug/g)				
348	13.6		ICPES	85ZAC 01
348	20	6	TCGS	76GLA 01
358	15	6	TCGS	76GLA 01
363	17	6	TCGS	76GLA 01
368	12		ICPES	82OWE 01
B-10 (atom %)				
19.827			IDMS	72CAR 01
Ba (ug/g)				
638	24		SSMS	74BER 01
Be (ug/g)				
450	50		CPAA	82LAS 01
Bi (ug/g)				
405	18		SSMS	74BER 01
Ca (%)				
7.64	0.002		SSMS	74BER 01
Cd (ug/g)				
187	21		SSMS	74BER 01
Ce (ug/g)				
318	14		SSMS	74BER 01

Conc	Uncer	Com	Method	Reference
Co (ug/g)				
135	14		ITNA	73SHE 01
360	60	6	PROBE	71HEI 02
360	90	6	PROBE	71HEI 02
375	12		SSMS	74BER 01
390	90	6	PROBE	71HEI 02
390	100	6	PROBE	71HEI 02
390	110	6	PROBE	71HEI 02
400	130	6	PROBE	71HEI 02
420	140	6	PROBE	71HEI 02
420	180	6	PROBE	71HEI 02
Cr (ug/g)				
340	40	6	PROBE	71HEI 02
360	40	6	PROBE	71HEI 02
370	100	6	PROBE	71HEI 02
371	15		SSMS	74BER 01
380	140	6	PROBE	71HEI 02
440	40	6	PROBE	71HEI 02
440	90	6	PROBE	71HEI 02
500	120	6	PROBE	71HEI 02
510	60	6	PROBE	71HEI 02
Cu (ug/g)				
230	210	6	PROBE	71HEI 02
270	150	6	PROBE	71HEI 02
350	200	6	PROBE	71HEI 02
360	130	6	PROBE	71HEI 02
420	200	6	PROBE	71HEI 02
440	250	6	PROBE	71HEI 02
500	100	6	PROBE	71HEI 02
510	110	6	PROBE	71HEI 02
Fe (ug/g)				
460	10		POL	73MAI 01
Ga (ug/g)				
481	10		SSMS	74BER 01
Ge (ug/g)				
496	10		SSMS	74BER 01
Hf (ug/g)				
220	14		SSMS	74BER 01

TABLE 610-2: INDIVIDUAL DATA FOR NBS SRM 610 (cont.)

Conc	Uncer	Com	Method	Reference
In (ug/g)				
319	11		SSMS	74BER 01
Li (ug/g)				
354	27		CPAA	82LAS 01
Mg (ug/g)				
472	22		SSMS	74BER 01
Mn (ug/g)				
391	7		SSMS	74BER 01
440	90	6	PROBE	71HEI 02
450	90	6	PROBE	71HEI 02
480	100	6	PROBE	71HEI 02
490	40	6	PROBE	71HEI 02
490	70	6	PROBE	71HEI 02
530	70	6	PROBE	71HEI 02
530	80	6	PROBE	71HEI 02
550	100	6	PROBE	71HEI 02
Mo (ug/g)				
307	19		SSMS	74BER 01
Ni (ug/g)				
431	10		SSMS	74BER 01
440	50	6	PROBE	71HEI 02
450	7		POL	73MAI 01
450	50	6	PROBE	71HEI 02
470	70	6	PROBE	71HEI 02
480	80	6	PROBE	71HEI 02
550	140	6	PROBE	71HEI 02
550	180	6	PROBE	71HEI 02
940	420	6	PROBE	71HEI 02
950	220	6	PROBE	71HEI 02
Pb (ug/g)				
392	11		SSMS	74BER 01
425.58	0.4	17	IDMS	73BAR 01
426.15	0.41	17	IDMS	73BAR 01
427	1		IDMS	83BRO 01
Rb (ug/g)				
425.7	0.7		IDMS	73MOO 01
Sb (ug/g)				
387	18		SSMS	74BER 01
Sr (ug/g)				
515.5	0.3		IDMS	73MOO 01
Ta (ug/g)				
206	9		SSMS	74BER 01
Te (ug/g)				
259	21		SSMS	74BER 01
Th (ug/g)				
455.4	1.6	17	IDMS	73BAR 01
457.23	0.52	17	IDMS	73BAR 01
469	7		SSMS	74BER 01
Ti (ug/g)				
361	18		SSMS	74BER 01
430	50	6	PROBE	71HEI 02
434	10		POL	73MAI 01
440	30	6	PROBE	71HEI 02
530	80	6	PROBE	71HEI 02
540	70	6	PROBE	71HEI 02
540	80	6	PROBE	71HEI 02
550	70	6	PROBE	71HEI 02
550	100	6	PROBE	71HEI 02
560	110	6	PROBE	71HEI 02
Tl (ug/g)				
52	35		SSMS	74BER 01
61.8	1		IDMS	73BAR 01
U (ug/g)				
413	18		SSMS	74BER 01
430			DNA	84GLA 02
461.3	1	17	IDMS	73BAR 01
461.3	1.7	D	IDMS	72CAR 01
461.5	0.4	17	IDMS	73BAR 01
461.5	1.1	D	IDMS	72CAR 01
462.8	13.8		NT	72CAR 01
470	90	17	DNA	82CON 01
471	28	17	DNA	82CON 01

TABLE 610-2: INDIVIDUAL DATA FOR NBS SRM 610 (cont.)

Conc	Uncer	Com	Method	Reference
U-234 (atom %)				
0.001			IDMS	73BAR 01
U-235 (atom %)				
0.2376			IDMS	73BAR 01
0.2376	0.0004		IDMS	72CAR 01
U-235/238 (ratio)				
0.0023			RTNA	86GAU 01
0.0024	0.0001		RTNA	85GAU 04
0.0025	0.0001		RTNA	84GLA 02
0.0026	0.0001		RTNA	84GLA 11
U-236 (atom %)				
0.0043			IDMS	73BAR 01
U-238 (atom %)				
99.7571			IDMS	73BAR 01

Conc	Uncer	Com	Method	Reference
V (ug/g)				
206	10		SSMS	74BER 01
410	70	6	PROBE	71HEI 02
430	70	6	PROBE	71HEI 02
450	100	6	PROBE	71HEI 02
460	40	6	PROBE	71HEI 02
500	80	6	PROBE	71HEI 02
530	70	6	PROBE	71HEI 02
550	70	6	PROBE	71HEI 02
560	110	6	PROBE	71HEI 02
Zn (ug/g)				
320	130	6	PROBE	71HEI 02
320	150	6	PROBE	71HEI 02
500	140	6	PROBE	71HEI 02
590	170	6	PROBE	71HEI 02
600	190	6	PROBE	71HEI 02
650	140	6	PROBE	71HEI 02

TABLE 612-1: COMPILED DATA FOR NBS SRM 612 TRACE ELEMENTS IN GLASS (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	NAA		OTHER METHODS		
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Method
Ag	ug/g	22 ± 0.3	26	(2)	---	20 - 31	31	(1)	20	(1)	AA
Al	%	1.1	1.11	(1)	---	---	1.11	(1)	---		
As	ug/g	---	47	(2)	---	35.6 - 58.1	58.1	(1)	35.6	(1)	PAA
Au	ug/g	5	5.09 ± 0.16	(3)	5	5 - 5.27	5.09 ± 0.16	(3)	---		
B	ug/g	32	33 ± 5	(4)	31	27.8 - 40	---		33.9	(2)	ICPES
B	ug/g	---	---		---	---	---		31	(1)	TCGS
B	ug/g	---	---		---	---	---		32.39	(1)	NT
B-10	atom %	---	19.827	(1)	---	---	---		19.827	(1)	IDMS
Ba	ug/g	41	36.5	(1)	---	---	36.5	(1)	---		
Be	ug/g	---	31	(1)	---	---	---		31	(1)	CPAA
Br	ug/g	---	< 1.4		---	---	< 1.4		---		
Ca	%	8.6	8.72	(2)	---	8.65 - 8.79	8.79	(1)	8.65	(1)	PAA
Ce	ug/g	39	41 ± 3	(4)	40.6	37 - 45.3	41.15	(2)	40.6	(1)	PAA
Co	ug/g	35.5 ± 1.2	35 ± 3	(5)	34.3	31 - 37.47	35 ± 3	(4)	33.3	(1)	PAA
Cr	ug/g	---	110	(2)	---	65.9 - 155	110	(2)	---		
Cs	ug/g	---	43 ± 2	(3)	43	41.1 - 44.8	42.0	(2)	44.8	(1)	PAA
Cu	ug/g	37.7 ± 0.9	37	(1)	---	---	37	(1)	---		
Dy	ug/g	35	37	(1)	---	---	37	(1)	---		
Er	ug/g	39	---		---	---	---		---		
Eu	ug/g	36	31 ± 5	(3)	32.86	26 - 35.3	31 ± 5	(3)	---		
Fe	ug/g	51 ± 2	56	(2)	---	51.3 - 60	60	(1)	51.3	(1)	POL
Gd	ug/g	39	37	(2)	---	36 - 38	---		37	(2)	TCGS
Hf	ug/g	---	42	(2)	---	32.2 - 52.29	42.2	(2)	---		
K	ug/g	64	---		---	---	---		---		
La	ug/g	36	38	(2)	---	35 - 40.2	37.6	(2)	---		
Li	ug/g	---	44	(1)	---	---	---		44	(1)	CPAA
Lu	ug/g	---	36.8	(1)	---	---	36.8	(1)	---		
Mg	ug/g	---	341	(1)	---	---	---		341	(1)	PAA
Mn	ug/g	39.6 ± 0.8	38.6	(2)	---	38.2 - 39	38.2	(1)	39	(1)	PAA
Na	%	10.4	10.6	(2)	---	10.5 - 10.68	10.68	(1)	10.5	(1)	PAA
Nb	ug/g	---	38.1	(1)	---	---	---		38.1	(1)	PAA
Nd	ug/g	36	---		---	---	---		---		
Ni	ug/g	38.8 ± 0.2	40.1	(1)	---	---	---		40.1	(1)	PAA
Pb	ug/g	38.57 ± 0.2	38.58 ± 0.16	(5)	38.56	38.37 - 38.83	---		38.6 ± 0.2	(5)	IDMS
Pb	ug/g	---	---		---	---	---		36.3	(1)	AA
Rb	ug/g	31.4 ± 0.4	32 ± 2	(5)	31.7	31.41 - 36	36	(1)	32	(1)	PAA
Rb	ug/g	---	---		---	---	---		31.425	(2)	IDMS
Sb	ug/g	---	39 ± 6	(3)	39.4	32.2 - 45.2	38.7	(2)	39.4	(1)	PAA
Sc	ug/g	---	38 ± 3	(3)	38.2	34 - 40.35	37.2	(2)	38.2	(1)	PAA
Si	%	33.6	34.04	(1)	---	---	34.04	(1)	---		
Sm	ug/g	39	35 ± 4	(3)	32.8	32.7 - 39.6	39.6	(1)	32.75	(2)	TCGS
Sr	ug/g	78.4 ± 0.2	77.6 ± 1.0	(4)	77.3	76.3 - 78.38	---		77.3	(1)	PAA
Sr	ug/g	---	---		---	---	---		78.345	(2)	IDMS
Sr-87/86	ratio	---	0.70907	(1)	---	---	---		0.70907	(1)	IDMS
Ta	ug/g	---	44	(2)	---	36.33 - 52.7	44.5	(2)	---		
Tb	ug/g	---	37	(2)	---	22 - 52.96	37.5	(2)	---		
Th	ug/g	37.79 ± 0.08	36 ± 3	(5)	37.55	31 - 38.43	35 ± 4	(3)	37.67	(2)	IDMS
Ti	ug/g	50.1 ± 0.8	53	(2)	---	50 - 55.2	---		55.2	(1)	PAA
Ti	ug/g	---	---		---	---	---		50	(1)	POL
Tl	ug/g	15.7 ± 0.3	15.7	(1)	---	---	---		15.68	(1)	IDMS
U	ug/g	37.38 ± 0.08	37.5 ± 1.3	(9)	37.37	35.74 - 40	40 ± 3	(4)	37.4 ± 0.1	(4)	IDMS
U	ug/g	---	---		---	---	---		36.32	(2)	NT
U-235	atom %	0.2392	0.2392	(1)	---	---	---		0.2392	(1)	IDMS
U-235/238	ratio	---	0.0023	(1)	---	---	0.00229	(1)	---		
V	ug/g	---	58.6	(1)	---	---	58.6	(1)	---		
Y	ug/g	---	37.9	(1)	---	---	---		37.9	(1)	PAA
Yb	ug/g	42	48	(2)	---	40 - 55	47.5	(2)	---		
Zr	ug/g	---	41.8	(1)	---	---	---		41.8	(1)	PAA

TABLE 612-2: INDIVIDUAL DATA FOR NBS SRM 612 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ag (ug/g)				
20	1		FAA	84HEA 01
31	7		ITNA	73SHE 01
Al (%)				
1.1109	0.0212		ITNA	85PEN 01
As (ug/g)				
35.6	0.3		PAA	80KAN 01
58.1	7.3		ITNA	84KUL 01
Au (ug/g)				
5	0.2		ITNA	84KUL 01
5	1		ITNA	73SHE 01
5.27	0.11		ITNA	73KIM 01
B (ug/g)				
27.8	2.9		ICPES	85ZAC 01
31	3		TCGS	84GLA 01
32.39	1.04		NT	72CAR 01
40	4		ICPES	82OWE 01
B-10 (atom %)				
19.827			IDMS	72CAR 01
Ba (ug/g)				
36.5	5.2		ITNA	84KUL 01
Be (ug/g)				
31	7		CPAA	82LAS 01
Br (ug/g)				
<	1.4		ITNA	84KUL 01
Ca (%)				
8.65	0.14		PAA	80KAN 01
8.79	0.72		ITNA	84KUL 01
Ce (ug/g)				
37	2		ITNA	73SHE 01
40.6	0.2		PAA	80KAN 01
41.2			UU	77HAN 02
45.3	1.5		ITNA	84KUL 01
Co (ug/g)				
31	1		ITNA	73SHE 01
33.3	1		PAA	80KAN 01
34.3	2.9		ITNA	84KUL 01
37.1	2.3	6	ITNA	73KIM 01
37.47	4.1	6	ITNA	73KIM 01
Cr (ug/g)				
65.9	3.7		ITNA	84KUL 01
155	8		ITNA	73KIM 01
Cs (ug/g)				
41.1	6.6		ITNA	73KIM 01
43	2		ITNA	84KUL 01
44.8	1.2		PAA	80KAN 01
Cu (ug/g)				
37	4		ITNA	84KUL 01
Dy (ug/g)				
37	4		ITNA	84KUL 01
Eu (ug/g)				
26	1		ITNA	73SHE 01
32.86	2.19		ITNA	73KIM 01
35.3	1.2		ITNA	84KUL 01
Fe (ug/g)				
51.3	0.8		POL	73MAI 01
60	7		ITNA	84KUL 01
Gd (ug/g)				
36	4	4	TCGS	85GLA 05
38	4	4	TCGS	85GLA 05
Hf (ug/g)				
32.2	1.6		ITNA	84KUL 01
52.29	3.11		ITNA	73KIM 01
La (ug/g)				
35	15		ITNA	73SHE 01
40.2	1.2		ITNA	84KUL 01

TABLE 612-2: INDIVIDUAL DATA FOR NBS SRM 612 (cont.)

Conc	Uncer	Com	Method	Reference
Li (ug/g)				
44	8		CPAA	82LAS 01
Lu (ug/g)				
36.8	0.2		ITNA	84KUL 01
Mg (ug/g)				
<	2412		ITNA	85PEN 01
341	16		PAA	80KAN 01
Mn (ug/g)				
38.2	1.1		ITNA	84KUL 01
39	2.6		PAA	80KAN 01
Na (%)				
10.5	0.15		PAA	80KAN 01
10.68	0.59		ITNA	84KUL 01
Nb (ug/g)				
38.1	1		PAA	80KAN 01
Ni (ug/g)				
40.1	1.1		PAA	80KAN 01
Pb (ug/g)				
36.3	1.5		FAA	84HEA 01
38.37	0.13		IDMS	86FIS 01
38.56	0.07	17	IDMS	73BAR 01
38.56	0.11		IDMS	77GUL 01
38.57	0.09	17	IDMS	73BAR 01
38.83	0.04		IDMS	83BRO 01
Rb (ug/g)				
31.41	0.08		IDMS	83LIP 01
31.44	0.31		IDMS	73MOO 01
31.7			UU	77HAN 02
32	1.4		PAA	80KAN 01
36	4		ITNA	84KUL 01
Sb (ug/g)				
32.2	1.6		ITNA	84KUL 01
39.4	0.3		PAA	80KAN 01
45.2	6.74		ITNA	73KIM 01

Conc	Uncer	Com	Method	Reference
Sc (ug/g)				
34	3		ITNA	84KUL 01
38.2	1.2		PAA	80KAN 01
40.35	0.35		ITNA	73KIM 01
Si (%)				
34.04	0.65		ITNA	85PEN 01
Sm (ug/g)				
32.7	3	4	TCGS	85GLA 05
32.8	3	4	TCGS	85GLA 05
39.6	1.1		ITNA	84KUL 01
Sr (ug/g)				
76.3			UU	77HAN 02
77.3	1.3		PAA	80KAN 01
78.31	0.09		IDMS	83LIP 01
78.38	0.25		IDMS	73MOO 01
Sr-87/86 (ratio)				
709.07	0.1	28	IDMS	83LIP 01
Ta (ug/g)				
36.33	5.6		ITNA	73KIM 01
52.7	0.3		ITNA	84KUL 01
Tb (ug/g)				
22	2		ITNA	84KUL 01
52.96	5.62		ITNA	73KIM 01
Th (ug/g)				
31	1		ITNA	73SHE 01
36	2		ITNA	84KUL 01
37.55	0.04	17	IDMS	73BAR 01
37.79	0.017	17	IDMS	73BAR 01
38.43	0.42		ITNA	73KIM 01
Ti (ug/g)				
50	0.3		POL	73MAI 01
55.2	8.3		PAA	80KAN 01
Tl (ug/g)				
15.68	0.1		IDMS	73BAR 01

TABLE 612-2: INDIVIDUAL DATA FOR NBS SRM 612 (cont.)

Conc	Uncer	Com	Method	Reference
U (ug/g)				
35.74			NT	80VIR 01
36.3	7.2	17	DNA	82CON 01
36.9	1.8		NT	72CAR 01
37.37	0.015	17	IDMS	73BAR 01
37.37	0.064		IDMS	86FIS 01
37.39	0.09	D	IDMS	72CAR 01
37.41	0.09	17	IDMS	73BAR 01
37.41	0.21	D	IDMS	72CAR 01
37.66	0.08		IDMS	77GUL 01
39	4.9	17	DNA	82CON 01
40			DNA	84GLA 02
43.6	1.6		ITNA	84KUL 01
U-235 (atom %)				
0.2392	0.0004		IDMS	72CAR 01

Conc	Uncer	Com	Method	Reference
U-235/238 (atom %)				
0.00229	0.00011		RTNA	84GLA 02
V (ug/g)				
58.6	6		ITNA	84KUL 01
Y (ug/g)				
37.9	1.4		PAA	80KAN 01
Yb (ug/g)				
40	3		ITNA	84KUL 01
55	7.15		ITNA	73KIM 01
Zr (ug/g)				
41.8	1.1		PAA	80KAN 01

TABLE 614-1: COMPILED DATA FOR NBS SRM 614 TRACE ELEMENTS IN GLASS (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	METHOD MEANS		
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Method
Ag	ug/g	0.42 ± 0.04	0.52	(2)	---	0.471 - 0.57	0.57	(1)	NAA
Ag	ug/g	---	---		---	---	0.471	(1)	AA
Au	ng/g	500	580 ± 300	(4)	510	280 - 1000	690 ± 270	(3)	NAA
Au	ug/g	---	---		---	---	280	(1)	AA
B	ug/g	1.3 ± 0.2	1.14	(2)	---	0.99 - 1.29	0.99	(1)	TCGS
B	ug/g	---	---		---	---	1.29	(1)	NT
B-10	atom %	---	19.827	(1)	---	---	19.827	(1)	IDMS
Br	ug/g	---	< 1		---	---	< 1		NAA
Ca	%	8.6	7.92	(1)	---	---	7.92	(1)	NAA
Cd	ng/g	550	---		---	---	---		
Ce	ug/g	---	1.24	(1)	---	---	1.24	(1)	NAA
Co	ug/g	0.73 ± 0.02	1.2 ± 0.5	(4)	0.85	0.59 - 1.66	1.2 ± 0.5	(4)	NAA
Cr	ug/g	---	1.81	(1)	---	---	1.81	(1)	NAA
Cs	ng/g	---	720	(2)	---	590 - 860	725	(2)	NAA
Cu	ug/g	1.37 ± 0.07	1.61	(1)	---	---	1.61	(1)	AA
Dy	ug/g	---	1.4	(1)	---	---	1.4	(1)	NAA
Eu	ug/g	0.99 ± 0.04	0.85 ± 0.28	(3)	0.91	0.54 - 1.10	0.85 ± 0.28	(3)	NAA
Fe	ug/g	13.3 ± 1	13.8 ± 1.0	(3)	13.5	13 - 15	15	(1)	NAA
Fe	ug/g	---	---		---	---	13	(1)	AA
Fe	ug/g	---	---		---	---	13.5	(1)	POL
Ga	ug/g	1.3	---		---	---	---		
Gd	ug/g	---	0.75	(2)	---	0.70 - 0.80	0.75	(2)	TCGS
Hf	ug/g	---	0.88	(2)	---	0.55 - 1.2	0.88	(2)	NAA
K	ug/g	30 ± 1	---		---	---	---		
La	ng/g	830 ± 20	680	(1)	---	---	680	(1)	NAA
Lu	ng/g	---	630	(1)	---	---	630	(1)	NAA
Mn	ug/g	---	< 3.8		---	---	< 3.8		NAA
Na	%	10.4	10.39	(1)	---	---	10.39	(1)	NAA
Ni	ug/g	0.95	0.95	(1)	---	---	0.95	(1)	POL
Pb	ug/g	2.32 ± 0.04	2.30 ± 0.06	(4)	2.32	2.22 - 2.35	2.33 ± 0.02	(3)	IDMS
Pb	ug/g	---	---		---	---	2.22	(1)	AA
Rb	ug/g	0.855 ± 0.005	0.89	(2)	---	0.855 - 0.92	0.92	(1)	NAA
Rb	ug/g	---	---		---	---	0.855	(1)	IDMS
Sb	ug/g	1.06	1.03 ± 0.10	(3)	1.08	0.91 - 1.10	1.03 ± 0.10	(3)	NAA
Sc	ng/g	590 ± 40	720 ± 100	(3)	680	640 - 840	720 ± 100	(3)	NAA
Sm	ug/g	---	0.75 ± 0.12	(3)	0.69	0.68 - 0.89	0.89	(1)	NAA
Sm	ug/g	---	---		---	---	0.68	(2)	TCGS
Sr	ug/g	45.8 ± 0.1	45.82	(1)	---	---	45.82	(1)	IDMS
Ta	ug/g	---	0.97	(2)	---	0.96 - 0.98	0.97	(2)	NAA
Tb	ng/g	---	560	(2)	---	510 - 620	565	(2)	NAA
Th	ng/g	748 ± 6	744 ± 9	(4)	746	730 - 750	740	(2)	NAA
Th	ug/g	---	---		---	---	747.5	(2)	IDMS
Ti	ug/g	3.1 ± 0.3	3.1	(1)	---	---	3.1	(1)	POL
Tl	ng/g	269 ± 5	280	(2)	---	269 - 290	290	(1)	NAA
Tl	ug/g	---	---		---	---	269	(1)	IDMS
U	ug/g	0.823 ± 0.002	0.82 ± 0.04	(6)	0.8230	0.74 - 0.87	0.87	(1)	NAA
U	ug/g	---	---		---	---	0.822 ± 0.005	(3)	IDMS
U	ug/g	---	---		---	---	0.7835	(2)	NT
U-235	atom %	0.2792	0.2792	(1)	---	---	0.2792	(1)	IDMS
V	ug/g	---	< 13		---	---	< 13		NAA
Yb	ug/g	---	1.06	(2)	---	0.74 - 1.38	1.06	(2)	NAA

TABLE 614-2: INDIVIDUAL DATA FOR NBS SRM 614 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ag (ug/g)				
0.471	0.06		FAA	82JEN 02
0.57	0.07		ITNA	73SHE 01
Au (ng/g)				
280	140		FAA	82JEN 02
510	20		ITNA	84KUL 01
550	50		ITNA	73KIM 01
1000	800		ITNA	73SHE 01
B (ug/g)				
0.99	0.32		TCGS	84GLA 01
1.29	0.05		NT	72CAR 01
2.5	1.7	6	TCGS	76GLA 01
2.6	1.5	6	TCGS	76GLA 01
2.9	1.5	6	TCGS	76GLA 01
B-10 (atom %)				
19.827			IDMS	72CAR 01
Br (ug/g)				
<	1		ITNA	84KUL 01
Ca (%)				
7.92	0.78		ITNA	84KUL 01
Ce (ug/g)				
1.24	0.09		ITNA	84KUL 01
Co (ug/g)				
0.59	0.1		ITNA	73SHE 01
0.85	0.09		ITNA	84KUL 01
1.63	0.09		ITNA	73KIM 01
1.66	0.17		ITNA	73KIM 01
Cr (ug/g)				
1.81	0.2		ITNA	73KIM 01
Cs (ng/g)				
590	50		ITNA	73KIM 01
860	30		ITNA	84KUL 01

Conc	Uncer	Com	Method	Reference
Cu (ug/g)				
<	9		ITNA	84KUL 01
1.61	0.32		FAA	82JEN 02
Dy (ug/g)				
1.4	0.3		ITNA	84KUL 01
Eu (ug/g)				
0.54	0.05		ITNA	73KIM 01
0.91	0.07		ITNA	84KUL 01
1.1	0.6		ITNA	73SHE 01
Fe (ug/g)				
13			FAA	84HEA 01
13.5	0.7		POL	73MAI 01
15	2		ITNA	84KUL 01
Gd (ug/g)				
0.7	0.4	4	TCGS	85GLA 05
0.8	0.2	4	TCGS	85GLA 05
Hf (ug/g)				
0.55	0.06		ITNA	84KUL 01
1.2	0.18		ITNA	73KIM 01
La (ng/g)				
<	2000		ITNA	73SHE 01
680	120		ITNA	84KUL 01
Lu (ng/g)				
630	80		ITNA	84KUL 01
Mn (ug/g)				
<	3.8		ITNA	84KUL 01
Na (%)				
10.39	0.22		ITNA	84KUL 01
Ni (ug/g)				
0.95	0.08		POL	73MAI 01

TABLE 614-2: INDIVIDUAL DATA FOR NBS SRM 614 (cont.)

Conc	Uncer	Com	Method	Reference
Pb (ug/g)				
2.22			FAA	84HEA 01
2.32	0.016	17	IDMS	73BAR 01
2.33	0.006	17	IDMS	73BAR 01
2.35	0.005		IDMS	86FIS 01
Rb (ug/g)				
0.855	0.005		IDMS	73MOO 01
0.92	0.11		ITNA	84KUL 01
Sb (ug/g)				
0.91	0.01		ITNA	84KUL 01
1.08	0.11		ITNA	73KIM 01
1.1	0.1		ITNA	73SHE 01
Sc (ng/g)				
640	20		ITNA	84KUL 01
680	230		ITNA	73SHE 01
840	10		ITNA	73KIM 01
Sm (ug/g)				
0.68	0.1	4	TCGS	85GLA 05
0.69	0.1	4	TCGS	85GLA 05
0.89	0.06		ITNA	84KUL 01
Sr (ug/g)				
45.82	0.09		IDMS	73MOO 01
Ta (ug/g)				
0.96	0.05		ITNA	84KUL 01
0.98	0.04		ITNA	73KIM 01
Tb (ng/g)				
510	40		ITNA	84KUL 01
620	60		ITNA	73KIM 01
Th (ng/g)				
580	150		ITNA	73SHE 01
730	90		ITNA	84KUL 01
746	3	17	IDMS	73BAR 01
749	2	17	IDMS	73BAR 01
750	10		ITNA	73KIM 01
Ti (ug/g)				
3.1	0.2		POL	73MAI 01
Tl (ng/g)				
269	1		IDMS	73BAR 01
290	50		RTNA	82COH 01
U (ug/g)				
0.74			NT	80VIR 01
0.817	0.009		IDMS	86FIS 01
0.823	0.0007	17	IDMS	73BAR 01
0.823	0.002	D	IDMS	72CAR 01
0.827	0.0025	17	IDMS	73BAR 01
0.827	0.007		NT	72CAR 01
0.828	0.05	D	IDMS	72CAR 01
0.87	0.14		ITNA	84KUL 01
U-235 (atom %)				
0.2792	0.0004		IDMS	72CAR 01
V (ug/g)				
<	13		ITNA	84KUL 01
Yb (ug/g)				
0.74	0.06		ITNA	84KUL 01
1.38	0.01		ITNA	73KIM 01

TABLE 616-1: COMPILED DATA FOR NBS SRM 616 TRACE ELEMENTS IN GLASS (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD	(n)	MEDIAN	RANGE	METHOD MEANS Mean	(n)	Method
Au	ng/g	180 ± 10	---		---	---	---		
B	ng/g	200 ± 20	220	(2)	---	203 - 230	230	(1)	TCGS
B	ng/g	---	---		---	---	203	(1)	NT
B-10	atom %	---	19.827	(1)	---	---	19.827	(1)	IDMS
Cu	ng/g	800 ± 90	---		---	---	---		
Fe	ug/g	11 ± 2	12	(2)	---	11 - 14	11	(1)	POL
Fe	ug/g	---	---		---	---	14	(1)	CPAA
Ga	ng/g	230 ± 20	---		---	---	---		
Gd	ng/g	---	< 10		---	---	< 10		TCGS
K	ug/g	29 ± 1	---		---	---	---		
La	ng/g	34 ± 7	---		---	---	---		
Pb	ug/g	1.85 ± 0.04	1.86	(2)	---	1.85 - 1.88	1.865	(2)	IDMS
Rb	ng/g	100 ± 7	99.8	(1)	---	---	99.8	(1)	IDMS
Sb	ng/g	78 ± 7	12	(1)	---	---	12	(1)	NAA
Sc	ng/g	26 ± 12	20	(1)	---	---	20	(1)	NAA
Sm	ng/g	---	< 10		---	---	< 10		TCGS
Sr	ug/g	41.72 ± 0.05	41.72	(1)	---	---	41.72	(1)	IDMS
Th	ng/g	25.2 ± 0.7	23 ± 4	(3)	25.2	18 - 25.5	18	(1)	NAA
Th	ng/g	---	---		---	---	25.35	(2)	IDMS
Ti	ug/g	2.5 ± 0.7	2.5	(1)	---	---	2.5	(1)	POL
Tl	ng/g	8.2 ± 0.5	8.2	(1)	---	---	8.2	(1)	IDMS
U	ng/g	72.1 ± 1.3	72.3 ± 0.5	(3)	72.5	71.7 - 72.6	72.15	(2)	IDMS
U	ng/g	---	---		---	---	72.5	(1)	NT
U-235	atom %	0.6160	0.616	(1)	---	---	0.616	(1)	IDMS

TABLE 616-2: INDIVIDUAL DATA FOR NBS SRM 616 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
B (ng/g)				
203	57		NT	72CAR 01
230	130		TCGS	84GLA 01
B-10 (atom %)				
19.827			IDMS	72CAR 01
Fe (ug/g)				
11	0.8		POL	73MAI 01
14	3		CPAA	74SWI 01
Gd (ug/g)				
<	0.01	4	TCGS	85GLA 05
Pb (ug/g)				
1.85	0.018	17	IDMS	73BAR 01
1.88	0.014	17	IDMS	73BAR 01
Rb (ng/g)				
99.8	0.6		IDMS	73MOO 01
Sb (ng/g)				
12	20		ITNA	73SHE 01
Sc (ng/g)				
20	4		ITNA	73SHE 01
Sm (ug/g)				
<	0.01	4	TCGS	85GLA 05
Sr (ug/g)				
41.72	0.02		IDMS	73MOO 01
Th (ng/g)				
18	2		ITNA	73SHE 01
25.2	0.3	17	IDMS	73BAR 01
25.5	1.5	17	IDMS	73BAR 01
Ti (ug/g)				
2.5	0.2		POL	73MAI 01
Tl (ng/g)				
8.2	0.1		IDMS	73BAR 01
U (ng/g)				
71.7	0.5	17	IDMS	73BAR 01
71.7	1.4	D	IDMS	72CAR 01
72.5	1.5		NT	72CAR 01
72.6	0.4	17	IDMS	73BAR 01
72.9	1.7	D	IDMS	72CAR 01
U-235 (atom %)				
0.616	0.001		IDMS	72CAR 01

TABLE 633-1: COMPILED DATA FOR NBS SRM 633 PORTLAND CEMENT (RED CAP)
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean	(n)	RANGE	METHOD
Al	%	2.0	2.00	(2)	1.95 - 2.06	XRF
B	ug/g	< 100	---		---	---
Ca	%	45.34	46.11	(2)	46.02 - 46.20	XRF
F	ug/g	800	---		---	---
Fe	%	2.94	2.92	(1)	---	XRF
K	ug/g	1400	1410	(1)	---	XRF
LOI	%	0.75	---		---	---
Mg	ug/g	6300	5900	(1)	---	XRF
Mn	ug/g	280	---		---	---
Na	ug/g	4700	---		---	---
P	ug/g	1050	---		---	---
S	%	0.88	1.8	(2)	0.88 - 2.78	XRF
Si	%	10.22	10.22	(2)	10.2 - 10.25	XRF
Sr	ug/g	2600	---		---	---
Ti	ug/g	1440	---		---	---
Zn	ug/g	< 80	---		---	---

TABLE 633-2: INDIVIDUAL DATA FOR NBS SRM 633 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (%)				
1.95			XRF	74AND 03
2.06			XRF	79FRE 01
Ca (%)				
46.02			XRF	79FRE 01
46.2			XRF	74AND 03
Fe (%)				
2.92			XRF	79FRE 01
K (ug/g)				
1410			XRF	79FRE 01
Mg (ug/g)				
5900			XRF	79FRE 01
S (%)				
0.88			XRF	79FRE 01
2.78			XRF	79FRE 01
Si (%)				
10.2			XRF	74AND 03
10.25			XRF	79FRE 01

TABLE 634-1: COMPILED DATA FOR NBS SRM 634 PORTLAND CEMENT (GOLD CAP)
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean	(n)	METHOD
Al	%	2.76	2.7	(1)	XRF
B	ug/g	< 100	---		---
Ca	%	44.74	45	(1)	XRF
F	ug/g	700	---		---
Fe	%	1.98	---		---
K	ug/g	3500	---		---
LOI	%	1.61	---		---
Mn	ug/g	1950	---		---
Na	ug/g	1100	---		---
P	ug/g	440	---		---
S	ug/g	8840	---		---
Si	%	9.68	9.57	(1)	XRF
Sr	ug/g	1000	---		---
Ti	ug/g	1800	---		---
Zn	ug/g	160	---		---

TABLE 634-2: INDIVIDUAL DATA FOR NBS SRM 634
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (%)				
2.7			XRF	74AND 03
Ca (%)				
45			XRF	74AND 03
Si (%)				
9.57			XRF	74AND 03

TABLE 635-1: COMPILED DATA FOR NBS SRM 635 PORTLAND CEMENT (BLUE CAP)
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean (n)	RANGE	METHOD
Al	%	3.33	3.36 (2)	3.33 - 3.40	XRF
Ca	%	42.06	42.82 (2)	42.8 - 42.84	XRF
F	ug/g	300	---	---	---
Fe	%	1.82	1.85 (1)	---	XRF
K	ug/g	3700	3800 (1)	---	XRF
LOI	%	3.25	---	---	---
Mg	ug/g	---	7120 (1)	---	XRF
Mn	ug/g	630	---	---	---
Na	ug/g	500	---	---	---
P	ug/g	740	---	---	---
S	%	2.83	2.82 (1)	---	CB
Si	%	8.6	8.58 (2)	8.50 - 8.65	XRF
Sr	ug/g	1780	---	---	---
Ti	ug/g	1900	---	---	---
Zn	ug/g	80	---	---	---

TABLE 635-2: INDIVIDUAL DATA FOR NBS SRM 635 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (%)				
3.33			XRF	79FRE 01
3.4			XRF	74AND 03
Ca (%)				
42.8			XRF	74AND 03
42.84			XRF	79FRE 01
Fe (%)				
1.85			XRF	79FRE 01
K (ug/g)				
3800			XRF	79FRE 01
Mg (ug/g)				
7120			XRF	79FRE 01
S (%)				
2.82			CB	84LEC 02
Si (%)				
8.5			XRF	74AND 03
8.65			XRF	79FRE 01

TABLE 636-1: COMPILED DATA FOR NBS SRM 636 PORTLAND CEMENT (YELLOW CAP)
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean (n)	RANGE	METHOD
Al	%	1.6	1.72 (2)	1.68 - 1.75	XRF
Ca	%	45.43	45.46 (2)	45.43 - 45.5	XRF
F	ug/g	500	---	---	---
Fe	%	1.12	1.11 (1)	---	XRF
K	ug/g	4900	4650 (1)	---	XRF
LOI	%	1.16	---	---	---
Mg	%	---	2.31 (1)	---	XRF
Mn	ug/g	840	---	---	---
Na	ug/g	820	---	---	---
P	ug/g	390	---	---	---
S	%	0.924	0.94 (2)	0.925 - 0.964	CB,XRF
Si	%	10.84	10.72 (2)	10.70 - 10.75	XRF
Sr	ug/g	340	---	---	---
Ti	ug/g	1000	---	---	---
Zn	ug/g	240	---	---	---

TABLE 636-2: INDIVIDUAL DATA FOR NBS SRM 636 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (%)				
1.68			XRF	79FRE 01
1.75			XRF	74AND 03
Ca (%)				
45.43			XRF	79FRE 01
45.5			XRF	74AND 03
Fe (%)				
1.11			XRF	79FRE 01
K (ug/g)				
4650			XRF	79FRE 01
Mg (%)				
2.31			XRF	79FRE 01
S (%)				
0.925			CB	84LEC 02
0.964			XRF	79FRE 01
Si (%)				
10.7			XRF	74AND 03
10.75			XRF	79FRE 01

TABLE 637-1: COMPILED DATA FOR NBS SRM 637 PORTLAND CEMENT (PINK CAP)
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean (n)	RANGE	METHOD
Al	%	1.74	1.76 (2)	1.75 - 1.76	XRF
Ca	%	47.22	47.3 (2)	47.09 - 47.5	XRF
F	ug/g	400	---	---	---
Fe	%	1.26	1.22 (1)	---	XRF
K	ug/g	2100	2080 (1)	---	XRF
LOI	%	1.68	---	---	---
Mg	ug/g	---	3900 (1)	---	XRF
Mn	ug/g	420	---	---	---
Na	ug/g	1100	---	---	---
P	ug/g	1090	---	---	---
S	%	0.952	0.964 (1)	---	XRF
Si	%	10.77	10.8 (2)	10.8 - 10.8	XRF
Sr	ug/g	760	---	---	---
Ti	ug/g	1260	---	---	---
Zn	ug/g	80	---	---	---

TABLE 637-2: INDIVIDUAL DATA FOR NBS SRM 637 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (%)				
1.75			XRF	74AND 03
1.76			XRF	79FRE 01
Ca (%)				
47.09			XRF	79FRE 01
47.5			XRF	74AND 03
Fe (%)				
1.22			XRF	79FRE 01
K (ug/g)				
2080			XRF	79FRE 01
Mg (ug/g)				
3900			XRF	79FRE 01
S (%)				
0.964			XRF	79FRE 01
Si (%)				
10.8			XRF	79FRE 01
10.8			XRF	74AND 03

TABLE 638-1: COMPILED DATA FOR NBS SRM 638 PORTLAND CEMENT (GREEN CAP)
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean (n)	RANGE	METHOD
Al	%	2.35	2.41 (2)	2.40 - 2.42	XRF
B	ug/g	< 100	---	---	---
Ca	%	44.39	44.35 (2)	44.3 - 44.4	XRF
F	ug/g	400	---	---	---
Fe	%	2.48	2.49 (1)	---	XRF
K	ug/g	4900	4900 (1)	---	XRF
LOI	%	0.95	---	---	---
Mg	%	---	2.26 (1)	---	XRF
Mn	ug/g	350	---	---	---
Na	ug/g	960	---	---	---
P	ug/g	260	---	---	---
S	%	0.936	0.984 (1)	---	XRF
Si	%	10.03	9.99 (2)	9.98 - 10.0	XRF
Sr	ug/g	590	---	---	---
Ti	ug/g	1500	---	---	---
Zn	ug/g	720	---	---	---

TABLE 638-2: INDIVIDUAL DATA FOR NBS SRM 638 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (%)				
2.4			XRF	74AND 03
2.42			XRF	79FRE 01
Ca (%)				
44.3			XRF	74AND 03
44.4			XRF	79FRE 01
Fe (%)				
2.49			XRF	79FRE 01

Conc	Uncer	Com	Method	Reference
K (ug/g)				
4900			XRF	79FRE 01
Mg (%)				
2.26			XRF	79FRE 01
S (%)				
0.984			XRF	79FRE 01
Si (%)				
9.98			XRF	79FRE 01
10			XRF	74AND 03

TABLE 639-1: COMPILED DATA FOR NBS SRM 639 PORTLAND CEMENT (CLEAR CAP)
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean	CONSENSUS Mean	(r_i)	RANGE	METHOD
Al	%	2.26	2.3	(2)	2.3 - 2.3	XRF
Ca	%	47.02	47.14	(2)	47.07 - 47.2	XRF
F	ug/g	200	---		---	---
Fe	%	1.68	1.65	(1)	---	XRF
K	ug/g	500	500	(1)	---	XRF
LOI	%	1.0	---		---	---
Mg	ug/g	---	7120	(1)	---	XRF
Mn	ug/g	560	---		---	---
Na	ug/g	480	---		---	---
P	ug/g	350	---		---	---
S	%	0.992	0.98	(1)	---	XRF
Si	%	10.09	10.04	(2)	10.0 - 10.09	XRF
Sr	ug/g	1270	---		---	---
Ti	ug/g	1860	---		---	---
Zn	ug/g	80	---		---	---

TABLE 639-2: INDIVIDUAL DATA FOR NBS SRM 639 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (%)				
2.3			XRF	79FRE 01
2.3			XRF	74AND 03
Ca (%)				
47.07			XRF	79FRE 01
47.2			XRF	74AND 03
Fe (%)				
1.65			XRF	79FRE 01

Conc	Uncer	Com	Method	Reference
K (ug/g)				
500			XRF	79FRE 01
Mg (ug/g)				
7120			XRF	79FRE 01
S (%)				
0.98			XRF	79FRE 01
Si (%)				
10			XRF	74AND 03
10.09			XRF	79FRE 01

TABLE 688-1: COMPILED DATA FOR NBS SRM 688 BASALT (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS	MEDIAN	RANGE	NAA	ICPES	XRF	OTHER METHODS
		Mean ± SD	Mean ± SD (n)			Mean ± SD (n)	Mean (n)	Mean (n)	Mean ± SD (n) Method
Al	%	9.18 ± 0.05	9.17 ± 0.16 (7)	9.18	8.89 - 9.34	8.89 ± 0.35 (3)	9.04 (1)	9.34 (1)	9.22 ± 0.07 (3) TCGS
As	ug/g	---	2.50 (2)	---	2.33 - 2.68	2.50 (2)	---	---	---
Au	ng/g	---	2.1 (2)	---	0.9 - 3.3	2.1 (2)	---	---	---
B	ug/g	---	1.33 ± 0.15 (3)	1.2	1.2 - 1.5	---	---	---	1.22 ± 0.26 (4) TCGS
Ba	ug/g	200	197 ± 12 (5)	200	178 - 210	202 ± 7 (3)	178 (1)	200 (1)	---
Be	ng/g	---	700 (2)	---	200 - 1200	---	200 (1)	---	1200 (1) OES
C-Inorg	ug/g	140	---	---	---	---	---	---	---
Ca	%	8.7	8.47 ± 0.36 (7)	8.7	7.9 - 8.82	8.2 (2)	8.82 (1)	8.75 (1)	8.43 ± 0.46 (3) TCGS
Ce	ug/g	13.3	13 ± 2 (6)	12.87	10.1 - 16.7	13.4 ± 2.3 (5)	11.3 (1)	---	---
Cl	ug/g	---	33.9 ± 2.6 (3)	35	31 - 35.8	---	---	---	35 (2) TCGS
Cl	ug/g	---	---	---	---	---	---	---	31 (1) ISE
Co	ug/g	49.7	49 ± 3 (7)	47.5	46.1 - 55.6	50 ± 4 (5)	47 (1)	50 (1)	---
Cr	ug/g	332 ± 9	310 ± 50 (7)	328	230 - 377	337 ± 22 (5)	260 (1)	230 (1)	---
Cs	ng/g	---	240 ± 150 (3)	210	110 - 400	240 ± 150 (3)	---	---	---
Cu	ug/g	96	90 (1)	---	---	---	90 (1)	---	---
Dy	ug/g	---	3.4 ± 0.2 (6)	3.4	3.1 - 3.8	3.3 ± 0.2 (3)	3.8 (1)	---	3.4 (2) AA
Er	ug/g	---	2.11 ± 0.18 (3)	2.2	1.9 - 2.22	---	1.9 (1)	---	2.21 (2) AA
Eu	ug/g	1.07	1.01 ± 0.02 (6)	1.01	0.99 - 1.04	1.01 ± 0.02 (5)	1.01 (1)	---	---
F	ug/g	200	---	---	---	---	---	---	---
Fe	%	7.23 ± 0.03	7.17 ± 0.11 (8)	7.19	7.03 - 7.34	7.17 ± 0.07 (3)	7.34 (1)	7.19 (1)	7.1 ± 0.12 (3) TCGS
Fe2O3	%	---	1.8 (1)	---	---	---	---	---	1.8 (1) CALC
FeO	%	7.64 ± 0.03	7.645 (2)	---	7.64 - 7.65	---	---	---	7.65 (1) COLOR
FeO	%	---	---	---	---	---	---	---	7.64 (1) TITR
Ga	ug/g	---	17.4 (2)	---	17 - 17.7	37.4 (2)	17 (1)	---	---
Gd	ug/g	---	3.2 ± 0.4 (7)	3.3	2.5 - 3.7	2.5 (1)	3.6 (1)	---	3.23 ± 0.38 (5) TCGS
H	ug/g	---	400 (2)	---	390 - 410	---	---	---	400 (2) TCGS
H2O+	%	---	0.14 (1)	---	---	---	---	---	0.14 (1) COUL
H2O-	%	---	0.11 (1)	---	---	---	---	---	0.11 (1) COUL
Hf	ug/g	1.6	1.55 ± 0.08 (3)	1.58	1.46 - 1.62	1.55 ± 0.08 (3)	---	---	---
Ho	ng/g	---	810 ± 10 (3)	810	800 - 820	---	800 (1)	---	815 (2) AA
Ir	ng/g	---	< 1.8	---	---	< 1.8	---	---	---
K	ug/g	1550 ± 70	1590 ± 70 (5)	1590	1530 - 1700	---	1620 (1)	1590 (1)	1590 ± 100 (3) TCGS

TABLE 688-1: COMPILED DATA FOR NBS SRM 688 BASALT (cont.)

ELEMENT	UNITS	NBS	CONSENSUS	MEDIAN	RANGE	NAA	ICPES	XRF	OTHER METHODS
		Mean ± SD	Mean ± SD (n)			Mean ± SD (n)	Mean (n)	Mean (n)	Mean ± SD (n) Method
La	ug/g	---	5.3 ± 0.4 (7)	5.3	4.8 - 5.9	5.4 ± 0.5 (5)	5.3 (1)	5.0 (1)	---
Li	ug/g	---	7.0 (1)	---	---	---	7.0 (1)	---	---
Lu	ng/g	340	350 ± 40 (5)	340	330 - 420	360 ± 40 (4)	330 (1)	---	---
Mg	%	5.1	5.26 ± 0.22 (7)	5.22	5 - 5.7	5.56 (2)	5.08 (1)	5.22 (1)	5.44 ± 0.23 (3) TCGS
Mg	%	---	---	---	---	---	---	---	5.2 (1) AA
Mn	ug/g	1290 ± 20	1210 ± 60 (8)	1220	1120 - 1290	1200 ± 80 (3)	1240 (1)	1220 (1)	1190 ± 60 (3) TCGS
Na	%	1.6 ± 0.02	1.55 ± 0.08 (8)	1.57	1.39 - 1.63	1.50 ± 0.10 (4)	1.63 (1)	1.57 (1)	1.61 (2) TCGS
Nb	ug/g	---	5.0 (2)	---	5 - 5	---	5.0 (1)	5.0 (1)	---
Nd	ug/g	---	9.6 ± 1.1 (3)	9.95	8.38 - 10.4	9.2 (2)	10.4 (1)	---	---
Ni	ug/g	150	158 ± 30 (4)	143	123 - 186	154 (2)	143 (1)	180 (1)	---
P	ug/g	580 ± 10	700 ± 200 (3)	620	560 - 930	---	560 (1)	620 (1)	930 (1) COLOR
Pb	ug/g	3.3 ± 0.2	< 4	---	---	---	< 4	---	---
Pr	ug/g	---	2.4 (1)	---	---	---	2.4 (1)	---	---
Rb	ug/g	1.91 ± 0.01	2.6 (2)	---	2.18 - 3.0	2.18 (1)	---	3.0 (1)	---
Sb	ng/g	---	300 ± 200 (3)	420	87 - 466	300 ± 200 (3)	---	---	---
Sc	ug/g	38.1	38 ± 3 (7)	36.3	35.2 - 43.3	36.7 ± 1.5 (6)	43.3 (1)	---	---
Se	ug/g	---	< 3	---	---	< 3	---	---	---
Si	%	22.6 ± 0.05	22.52 ± 0.15 (4)	22.39	22.39 - 22.69	---	---	22.69 (1)	22.6 (1) COLOR
Si	%	---	---	---	---	---	---	---	22.4 (2) TCGS
Sm	ug/g	2.79	2.5 ± 0.2 (12)	2.4	2.09 - 2.9	2.4 ± 0.2 (6)	2.9 (1)	---	2.44 ± 0.12 (5) TCGS
Sr	ug/g	169.2 ± 0.7	172 ± 4 (4)	170.3	170 - 179	179 (1)	170 (1)	171 (2)	---
Ta	ng/g	---	310 ± 70 (3)	310	246 - 380	310 ± 70 (3)	---	---	---
Tb	ng/g	448	520 ± 40 (5)	520	462 - 580	520 ± 40 (5)	---	---	---
Th	ng/g	330 ± 20	360 ± 80 (3)	320	310 - 460	360 ± 80 (3)	---	---	---
Ti	ug/g	7000 ± 60	7090 ± 190 (6)	7000	6900 - 7390	7000 (1)	7390 (1)	7130 (1)	7000 ± 170 (3) TCGS
Tm	ng/g	---	290 ± 60 (3)	264	250 - 360	360 (1)	---	---	257 (2) AA
U	ng/g	370	310 ± 24 (4)	310	280 - 340	310 ± 25 (4)	---	---	---
V	ug/g	250	242 ± 8 (4)	235	235 - 248	242 (2)	248 (1)	235 (1)	---
Y	ug/g	---	17 ± 2 (3)	18	14.8 - 19.5	---	19.5 (1)	16.4 (2)	---
Yb	ug/g	2.09	2.05 ± 0.20 (7)	2.06	1.77 - 2.36	2.04 ± 0.23 (5)	2.2 (1)	---	1.97 (1) AA
Zn	ug/g	58	84 ± 10 (4)	79	73 - 94	90 (1)	79 (1)	73 (1)	94 (1) AA
Zr	ug/g	---	60.6 ± 1.9 (5)	60.8	58.6 - 63	59.7 (2)	63 (1)	60.4 (2)	---

TABLE 688-2: INDIVIDUAL DATA FOR NBS SRM 688 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (%)				
8.54	0.39		ITNA	82GRA 01
8.89	0.11		ITNA	85GLA 01
9.04	0.05		ICPES	83CRO 01
9.18	0.09		TCGS	85AND 01
9.18	0.09		TCGS	83AND 01
9.24	0.1		IENA	85GLA 02
9.3	0.2		TCGS	82GRA 01
9.34	0.08		WXRF	85GLA 01
As (ug/g)				
2.33	0.05		ITNA	83BOY 01
2.68	0.54		ITNA	82GRA 01
Au (ng/g)				
0.9	0.4		ITNA	82GRA 01
3.3	0.1		ITNA	83BOY 01
B (ug/g)				
<	3		OES	83MIL 01
0.88	0.14		TCGS	82GRA 01
1.2	0.2		TCGS	84GLA 01
1.3	0.2		TCGS	83AND 01
1.5	0.2		TCGS	85AND 01
Ba (ug/g)				
178	2		ICPES	83CRO 01
197	33		ITNA	82GRA 01
200	30		ITNA	85GLA 01
200	60		WXRF	85GLA 01
210	30		ITNA	84GLA 02
Be (ng/g)				
200	50		ICPES	83CRO 01
1200			OES	83MIL 01
Ca (%)				
7.9	0.2		TCGS	82GRA 01
8.2	0.6		ITNA	82GRA 01
8.2	0.6		ITNA	85GLA 01
8.7	0.09		TCGS	83AND 01
8.7	0.09		TCGS	85AND 01
8.75	0.02		WXRF	85GLA 01
8.82	0.02		ICPES	83CRO 01

Conc	Uncer	Com	Method	Reference
Ce (ug/g)				
10.1	3.9		ITNA	82GRA 01
11.3	0.4		ICPES	83CRO 01
12.87	0.2		ITNA	83BOY 01
13.4	0.6		ITNA	85GLA 01
13.7	0.5		RTNA	85GAU 04
16.7	1		RTNA	84GLA 11
25	25		WXRF	85GLA 01
Cl (ug/g)				
31	3		ISE	86ELS 01
35	1		TCGS	85AND 01
35.8	0.8		TCGS	83AND 01
Co (ug/g)				
46.1	0.5		ITNA	85GLA 01
46.6	0.9		ITNA	84GLA 11
47	1		ICPES	83CRO 01
47.5	1.5		ITNA	82GRA 01
50	3		WXRF	85GLA 01
51.9	0.5		ITNA	83BOY 01
55.6	1.2		ITNA	84GLA 02
Cr (ug/g)				
230	25		WXRF	85GLA 01
260	20		ICPES	83CRO 01
322	4		ITNA	86GAU 01
328	15		ITNA	82GRA 01
330	4		ITNA	85GLA 01
330	10		ITNA	84GLA 02
377	4		ITNA	83BOY 01
Cs (ng/g)				
<	400		ITNA	84GLA 11
<	600		ITNA	83BOY 01
110	60		ITNA	85GLA 01
210	110		ITNA	84GLA 02
400			ITNA	86GAU 01
Cu (ug/g)				
90	1		ICPES	83CRO 01

TABLE 688-2: INDIVIDUAL DATA FOR NBS SRM 688 (cont.)

Conc	Uncer	Com	Method	Reference
Dy (ug/g)				
3.1	0.3		RTNA	85GAU 04
3.2	0.8		ITNA	83BOY 01
3.4	0.14		FAA	84GLA 11
3.4	0.5		FAA	85GAU 04
3.53	0.17		RTNA	84GLA 11
3.8	0.2		ICPES	83CRO 01
Er (ug/g)				
1.9	0.1		ICPES	83CRO 01
2.2	0.4		FAA	85GAU 04
2.22	0.08		FAA	84GLA 11
Eu (ug/g)				
0.919	0.048		ITNA	82GRA 01
0.99	0.06		ITNA	85GLA 01
1.001	0.01		ITNA	83BOY 01
1.01	0.02		ICPES	83CRO 01
1.01	0.04		RTNA	85GAU 04
1.01	0.05		ITNA	84GLA 02
1.04	0.04		RTNA	84GLA 11
Fe (%)				
7.03	0.1		TCGS	85AND 01
7.03	0.1		TCGS	83AND 01
7.1	0.06		ITNA	84GLA 02
7.19	0.02		WXRF	85GLA 01
7.19	0.17		ITNA	85GLA 01
7.23	0.17		TCGS	82GRA 01
7.23	0.19		ITNA	82GRA 01
7.34	0.03		ICPES	83CRO 01
7.82	0.08		ITNA	83BOY 01
FE2O3 (%)				
1.8	0.17		CALC	85GLA 01
FEO (%)				
7.64			TITR	84GOL 01
7.65	0.15		COLOR	85GLA 01
Ga (ug/g)				
17	7		ICPES	83CRO 01
17.7	1.1		ITNA	83BOY 01
57	10		ITNA	82GRA 01
Gd (ug/g)				
2.5			ITNA	82GRA 01
2.82	0.08		TCGS	82GRA 01
2.88	0.1		TCGS	83AND 01
3.3	0.5	4	TCGS	85GLA 05
3.46	0.1		TCGS	85AND 01
3.6	0.3		ICPES	83CRO 01
3.7	0.4	4	TCGS	85GLA 05
H (ug/g)				
390	10		TCGS	83AND 01
410	10		TCGS	85AND 01
H2O+ (%)				
0.14	0.01		COUL	85GLA 01
H2O- (%)				
0.11	0.01		COUL	85GLA 01
Hf (ug/g)				
1.46	0.13		ITNA	84GLA 02
1.58	0.14		ITNA	82GRA 01
1.62	0.13		ITNA	85GLA 01
Ho (ng/g)				
800	50		ICPES	83CRO 01
810	60		FAA	85GAU 04
820	20		FAA	84GLA 11
Ir (ng/g)				
<	1.8		ITNA	83BOY 01
K (ug/g)				
1530	60		TCGS	83AND 01
1530	60		TCGS	85AND 01
1590	75		WXRF	85GLA 01
1620	30		ICPES	83CRO 01
1700	100		TCGS	82GRA 01

TABLE 688-2: INDIVIDUAL DATA FOR NBS SRM 688 (cont.)

Conc	Uncer	Com	Method	Reference
La (ug/g)				
4.8	0.4		RTNA	84GLA 11
4.96	0.05		ITNA	83BOY 01
5	2.5		WXRF	85GLA 01
5.3	0.1		ICPES	83CRO 01
5.3	0.3		RTNA	85GAU 04
5.9	0.2		ITNA	84GLA 02
5.9	0.6		ITNA	85GLA 01
7.54	0.93		ITNA	82GRA 01
Li (ug/g)				
7	1		ICPES	83CRO 01
Lu (ng/g)				
330	3		ITNA	83BOY 01
330	10		ICPES	83CRO 01
340	40		ITNA	84GLA 11
342	57		ITNA	82GRA 01
420	60		RTNA	84GLA 11
Mg (%)				
3.9	0.8		ITNA	82GRA 01
5	0.12		ITNA	85GLA 01
5.08	0.02		ICPES	83CRO 01
5.2			AA	85GAU 04
5.22	0.02		WXRF	85GLA 01
5.3	0.2		TCGS	83AND 01
5.31	0.18		TCGS	85AND 01
5.7	0.4		TCGS	82GRA 01
6.12	0.12		IENA	85GLA 02
Mn (ug/g)				
1120	60		TCGS	82GRA 01
1140	30		ITNA	85GLA 01
1180	70		ITNA	82GRA 01
1220	40		WXRF	85GLA 01
1230	40		TCGS	83AND 01
1230	40		TCGS	85AND 01
1240	20		ICPES	83CRO 01
1290	60		ITNA	84GLA 02

Conc	Uncer	Com	Method	Reference
Na (%)				
1.05	0.07		TCGS	82GRA 01
1.39	0.12		ITNA	82GRA 01
1.48	0.02		ITNA	85GAU 04
1.51	0.08		ITNA	85GLA 01
1.57	0.02		WXRF	85GLA 01
1.61	0.01		ITNA	84GLA 02
1.61	0.06		TCGS	83AND 01
1.61	0.06		TCGS	85AND 01
1.63	0.05		ICPES	83CRO 01
Nb (ug/g)				
5	1		WXRF	84KYL 01
5	1		ICPES	83CRO 01
Nd (ug/g)				
<	10		ITNA	85GLA 01
8.38	0.16		ITNA	83BOY 01
9.95	1.08		ITNA	82GRA 01
10.4	0.5		ICPES	83CRO 01
15	1		RTNA	84GLA 11
Ni (ug/g)				
123	29		ITNA	82GRA 01
143	2		ICPES	83CRO 01
180	50		WXRF	85GLA 01
186	13		ITNA	83BOY 01
P (ug/g)				
560	20		ICPES	83CRO 01
620	20		WXRF	85GLA 01
930			COLOR	85GAU 04
Pb (ug/g)				
<	4		ICPES	83CRO 01
Pr (ug/g)				
2.4	0.6		ICPES	83CRO 01
Rb (ug/g)				
<	10		ITNA	85GLA 01
2.18	0.26		ITNA	83BOY 01
3	3		WXRF	85GLA 01
32.7	1		WXRF	84KYL 01

TABLE 688-2: INDIVIDUAL DATA FOR NBS SRM 688 (cont.)

Conc	Uncer	Com	Method	Reference
Sb (ng/g)				
<	200		ITNA	85GLA 01
87	3		ITNA	83BOY 01
420			ITNA	84GLA 02
466	207		ITNA	82GRA 01
Sc (ug/g)				
35.2	0.4		ITNA	85GLA 01
35.5	0.1		ITNA	84GLA 11
36.1	0.9		ITNA	82GRA 01
36.3	0.5		ITNA	84GLA 02
38.3	0.4		ITNA	83BOY 01
38.9	0.2		ITNA	86GAU 01
43.3	0.5		ICPES	83CRO 01
Se (ug/g)				
<	3		ITNA	83BOY 01
Si (%)				
22.39	0.08		TCGS	85AND 01
22.39	0.08		TCGS	83AND 01
22.6			COLOR	85GAU 04
22.69	0.15		WXRF	85GLA 01
24.6	0.6		TCGS	82GRA 01
Sm (ug/g)				
2.09	0.22		ITNA	82GRA 01
2.29	0.03		ITNA	83BOY 01
2.3	0.3		ITNA	85GLA 01
2.31	0.08		TCGS	82GRA 01
2.35	0.02		TCGS	83AND 01
2.4	0.2	4	TCGS	85GLA 05
2.46	0.14		RTNA	85GAU 04
2.5	0.2	4	TCGS	85GLA 05
2.54	0.07		ITNA	84GLA 02
2.62	0.02		TCGS	85AND 01
2.84	0.18		RTNA	84GLA 11
2.9	0.7		ICPES	83CRO 01
Sr (ug/g)				
170	10		ICPES	83CRO 01
170.3	1		WXRF	84KYL 01
171	10		WXRF	85GLA 01
179	14		IENA	84GLA 02

Conc	Uncer	Com	Method	Reference
Ta (ng/g)				
246	58		ITNA	82GRA 01
310	60		ITNA	85GLA 01
380	70		ITNA	84GLA 02
Tb (ng/g)				
462	25		ITNA	82GRA 01
512	10		ITNA	83BOY 01
520	60		ITNA	84GLA 02
535	24		RTNA	84GLA 11
580	50		ITNA	85GLA 01
Th (ng/g)				
310	60		ITNA	85GLA 01
320			ITNA	85GAU 04
460	130		ITNA	84GLA 02
Ti (ug/g)				
6900	100		TCGS	83AND 01
6910	100		TCGS	85AND 01
7000	700		ITNA	82GRA 01
7130	90		WXRF	85GLA 01
7200	200		TCGS	82GRA 01
7390	90		ICPES	83CRO 01
Tm (ng/g)				
250	60		FAA	85GAU 04
264	15		FAA	84GLA 11
360	36		ITNA	83BOY 01
U (ng/g)				
280			DNA	84GLA 02
310			DNA	86GAU 01
310	40		DNA	85GLA 01
340	80		ITNA	82GRA 01
V (ug/g)				
235	25		ITNA	82GRA 01
235	40		WXRF	85GLA 01
248	1		ICPES	83CRO 01
248	5		RTNA	84GLA 11

TABLE 688-2: INDIVIDUAL DATA FOR NBS SRM 688 (cont.)

Conc	Uncer	Com	Method	Reference
Y (ug/g)				
14.8	1		WXRF	84KYL 01
18	4		WXRF	85GLA 01
19.5	0.1		ICPES	83CRO 01
Yb (ug/g)				
1.77	0.09		ITNA	84GLA 11
1.86	0.27		ITNA	82GRA 01
1.97	0.02		FAA	84GLA 11
2.06	0.05		ITNA	85GLA 01
2.14	0.02		ITNA	83BOY 01
2.2	0.03		ICPES	83CRO 01
2.36	0.12		RTNA	84GLA 11
Zn (ug/g)				
73	5		WXRF	85GLA 01
79	1		ICPES	83CRO 01
90	1.8		ITNA	83BOY 01
94			AA	85GAU 04
Zr (ug/g)				
58.6	8.7		ITNA	82GRA 01
58.8	1		WXRF	84KYL 01
60.8	0.3		ITNA	83BOY 01
62	2		WXRF	85GLA 01
63	4		ICPES	83CRO 01

TABLE 694-1: COMPILED DATA FOR NBS SRM 694 WESTERN PHOSPHATE ROCK
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD
Al	%	0.95 ± 0.05
Ca	%	31.2 ± 0.3
Cd	ug/g	131 ± 26
Cr	ug/g	6980
F	%	3.2 ± 0.1
Fe	ug/g	5520 ± 420
K	ug/g	4230 ± 170
Mg	ug/g	1990 ± 120
Mn	ug/g	90 ± 9
Na	ug/g	6380 ± 300
P	%	13.17 ± 0.04
Si	%	5.23 ± 0.19
Ti	ug/g	660
U	ug/g	141.4 ± 0.6
V	ug/g	1740 ± 390
Zn	ug/g	1520

TABLE 697-1: COMPILED DATA FOR NBS SRM 697 BAUXITE (DOMINICIAN)
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD
Al	%	24.2 ± 0.1
Ba	ug/g	130
Ca	ug/g	5100 ± 210
Ce	ug/g	690
Co	ug/g	13
Cr	ug/g	684 ± 34
Fe	%	14.0 ± 0.2
Hf	ug/g	14
K	ug/g	510 ± 60
LOI	%	22.1
Mg	ug/g	1100 ± 120
Mn	ug/g	3200 ± 230
Na	ug/g	270
P	ug/g	4200 ± 260
S	ug/g	520 ± 120
Sc	ug/g	58
Si	%	3.18 ± 0.03
Ti	%	1.51 ± 0.03
V	ug/g	350 ± 30
Zn	ug/g	300 ± 25
Zr	ug/g	480 ± 50

TABLE 696-1: COMPILED DATA FOR NBS SRM 696 BAUXITE (SURINAM)
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean	(n)	RANGE	METHOD
Al	%	28.8 ± 0.2	28.43	(2)	28.30 - 28.57	ICPES
Ba	ug/g	36	31	(2)	30.46 - 32.26	ICPES
Ca	ug/g	130 ± 15	122	(2)	115 - 129	ICPES
Ce	ug/g	41	38	(1)	---	---
Co	ug/g	0.9	---		---	---
Cr	ug/g	320 ± 30	318	(2)	314 - 321	ICPES
Fe	%	6.08 ± 0.07	6.04	(2)	6.01 - 6.07	ICPES
Hf	ug/g	32	29	(2)	28 - 30	ICPES
K	ug/g	75 ± 25	---		---	---
LOI	%	29.9 ± 0.2	---		---	---
Mg	ug/g	72 ± 18	63.3	(2)	60.30 - 66.33	ICPES
Mn	ug/g	31 ± 8	28.2	(2)	27.09 - 29.41	ICPES
Na	ug/g	52	---		---	---
P	ug/g	220 ± 30	209	(2)	192 - 227	ICPES
S	ug/g	840 ± 120	---		---	---
Sc	ug/g	8	8	(2)	7 - 9	ICPES
Si	%	1.77 ± 0.05	1.76	(2)	1.76 - 1.76	ICPES
Ti	%	1.58 ± 0.03	1.56	(2)	1.55 - 1.58	ICPES
V	ug/g	400 ± 30	398	(2)	398 - 398	ICPES
Zn	ug/g	11 ± 6	12.8	(1)	---	ICPES
Zr	ug/g	1040 ± 150	1003	(2)	992 - 1014	ICPES

TABLE 696-2: INDIVIDUAL DATA FOR NBS SRM 696 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (%)				
28.3015	0.4232	11	ICPES	83BAR 02
28.566	0.4232	11	ICPES	83BAR 02
Ba (ug/g)				
30.464	1.792	11	ICPES	83BAR 02
32.256	2.688	11	ICPES	83BAR 02
Ca (ug/g)				
115	1.4	11	ICPES	83BAR 02
129	2	11	ICPES	83BAR 02
Ce (ug/g)				
38	2	11	ICPES	83BAR 02
Cr (ug/g)				
314.64	6.84	11	ICPES	83BAR 02
321.48	6.84	11	ICPES	83BAR 02
Fe (%)				
6.0114	0.0699	11	ICPES	83BAR 02
6.0743	0.0629	11	ICPES	83BAR 02
Hf (ug/g)				
28	2	11	ICPES	83BAR 02
30	2	11	ICPES	83BAR 02
Mg (ug/g)				
60.3	6.03	11	ICPES	83BAR 02
66.33	1.206	11	ICPES	83BAR 02
Mn (ug/g)				
27.09	1.548	11	ICPES	83BAR 02
29.412	15.48	11	ICPES	83BAR 02
P (ug/g)				
191.84	4.36	11	ICPES	83BAR 02
226.72	4.36	11	ICPES	83BAR 02
Sc (ug/g)				
7	1	11	ICPES	83BAR 02
9	1	11	ICPES	83BAR 02
Si (%)				
1.7559	0.0234	11	ICPES	83BAR 02
1.7559	0.028	11	ICPES	83BAR 02
Ti (%)				
1.5514	0.024	11	ICPES	83BAR 02
1.5754	0.03	11	ICPES	83BAR 02
V (ug/g)				
397.6	5.6	11	ICPES	83BAR 02
397.6	5.6	11	ICPES	83BAR 02
Zn (ug/g)				
12.848	0.803	11	ICPES	83BAR 02
Zr (ug/g)				
992	15	11	ICPES	83BAR 02
1013.8	22.2	11	ICPES	83BAR 02

TABLE 698-1: COMPILED DATA FOR NBS SRM 698 BAUXITE (JAMAICAN)
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean	(n)	RANGE	METHOD
Al	%	25.5 ± 0.2	25.10	(2)	25.02 - 25.18	ICPES
Ba	ug/g	72	68	(2)	68 - 68	ICPES
Ca	ug/g	4400 ± 140	4400	(2)	4390 - 4404	ICPES
Ce	ug/g	300	300	(2)	291 - 310	ICPES
Co	ug/g	45	45	(2)	43 - 47	ICPES
Cr	ug/g	550 ± 40	527	(2)	527 - 527	ICPES
Fe	%	13.7 ± 0.1	13.6	(2)	13.35 - 13.91	ICPES
Hf	ug/g	15	13	(1)	---	---
K	ug/g	83 ± 17	---		---	---
LOI	%	27.3	---		---	---
Mg	ug/g	350 ± 50	332	(2)	332 - 332	ICPES
Mn	ug/g	2900 ± 230	2875	(2)	2872 - 2879	ICPES
Na	ug/g	110	---		---	---
P	ug/g	1600 ± 40	1585	(2)	1570 - 1600	ICPES
S	ug/g	880 ± 120	---		---	---
Sc	ug/g	51	48	(2)	46 - 50	ICPES
Si	ug/g	3200 ± 140	3180	(2)	3129 - 3232	ICPES
Ti	%	1.42 ± 0.04	1.40	(2)	1.39 - 1.40	ICPES
V	ug/g	360 ± 10	347	(2)	342 - 353	ICPES
Zn	ug/g	230 ± 20	221	(2)	217 - 225	ICPES
Zr	ug/g	450 ± 70	429.6	(2)	429.2 - 429.9	ICPES

TABLE 698-2: INDIVIDUAL DATA FOR NBS SRM 698 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (%)				
25.0217	0.3703	11	ICPES	83BAR 02
25.1804	0.3703	11	ICPES	83BAR 02
Ba (ug/g)				
68.096	2.688	11	ICPES	83BAR 02
68.096	3.584	11	ICPES	83BAR 02
Ca (ug/g)				
4390.1	57.2	11	ICPES	83BAR 02
4404.4	64.35	11	ICPES	83BAR 02
Ce (ug/g)				
291	5	11	ICPES	83BAR 02
310	10	11	ICPES	83BAR 02
Co (ug/g)				
43	2	11	ICPES	83BAR 02
47	3	11	ICPES	83BAR 02
Cr (ug/g)				
526.68	6.84	11	ICPES	83BAR 02
526.68	6.84	11	ICPES	83BAR 02
Fe (%)				
13.3509	0.2097	11	ICPES	83BAR 02
13.9101	0.2796	11	ICPES	83BAR 02
Hf (ug/g)				
13	1	11	ICPES	83BAR 02
Mg (ug/g)				
331.65	6.03	11	ICPES	83BAR 02
331.65	30.15	11	ICPES	83BAR 02
Mn (ug/g)				
2871.54	46.44	11	ICPES	83BAR 02
2879.28	38.7	11	ICPES	83BAR 02
P (ug/g)				
1569.6	21.8	11	ICPES	83BAR 02
1600.12	26.16	11	ICPES	83BAR 02
Sc (ug/g)				
46	3	11	ICPES	83BAR 02
50	2	11	ICPES	83BAR 02
Si (ug/g)				
3128.9	46.7	11	ICPES	83BAR 02
3231.64	42.03	11	ICPES	83BAR 02
Ti (%)				
1.3897	0.024	11	ICPES	83BAR 02
1.4017	0.018	11	ICPES	83BAR 02
V (ug/g)				
341.6	5.6	11	ICPES	83BAR 02
352.8	5.6	11	ICPES	83BAR 02
Zn (ug/g)				
216.81	8.03	11	ICPES	83BAR 02
224.84	4.015	11	ICPES	83BAR 02
Zr (ug/g)				
429.2	7.4	11	ICPES	83BAR 02
429.94	5.18	11	ICPES	83BAR 02

TABLE 1083-1: COMPILED DATA FOR NBS SRM 1083 WEAR METALS IN LUBRICATING OIL (revised 3/1/86)

ELEMENT	UNITS	NBS Mean
Ag	ng/g	< 50
Al	ug/g	< 0.5
Cd	ng/g	< 40
Cl	ug/g	1.7
Co	ng/g	< 10
Cr	ng/g	< 20
Cu	ng/g	< 500
Fe	ug/g	< 1
Mg	ng/g	< 100
Mn	ng/g	< 5
Mo	ng/g	< 10
Na	ng/g	< 60
Ni	ng/g	< 400
Pb	ng/g	< 40
S	ug/g	980
Si	ug/g	< 1
Sn	ng/g	< 400
Ti	ug/g	< 5
V	ng/g	< 300
Zn	ng/g	< 80

TABLE 1084-1: COMPILED DATA FOR NBS SRM 1084 WEAR METALS IN LUBRICATING OIL (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	METHOD
Ag	ug/g	101	95.7 ± 1.5 (3)	96	94 - 97	ICPES
Al	ug/g	98 ± 2	98 ± 6 (3)	100	92 - 103	ICPES
Cd	ng/g	< 40	---	---	---	---
Cl	ug/g	1.7	---	---	---	---
Co	ng/g	< 10	---	---	---	---
Cr	ug/g	100 ± 3	101 ± 1 (3)	101	100 - 102	ICPES
Cu	ug/g	98 ± 4	99 ± 2 (3)	99	96 - 101	ICPES
Fe	ug/g	100 ± 3	98.7 ± 0.6 (3)	99	98 - 99	ICPES
Mg	ug/g	98 ± 4	95 ± 3 (3)	96	92 - 97	ICPES
Mn	ng/g	< 5	---	---	---	---
Mo	ug/g	97 ± 5	97 ± 2 (3)	97	94 - 99	ICPES
Na	ng/g	< 60	---	---	---	---
Ni	ug/g	101 ± 4	97 ± 4 (3)	98	93 - 101	ICPES
Pb	ug/g	101	98 ± 2 (3)	97	96 - 100	ICPES
S	ug/g	2237	---	---	---	---
Si	ug/g	102	---	---	---	---
Sn	ug/g	102 ± 6	---	---	---	---
Ti	ug/g	99 ± 5	100 ± 2 (3)	101	98 - 102	ICPES
V	ng/g	< 300	---	---	---	---
Zn	ng/g	< 80	---	---	---	---

TABLE 1084-2: INDIVIDUAL DATA FOR NBS SRM 1084 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ag (ug/g)				
94	2	11	ICPES	84BAR 03
96	5	11	ICPES	84BAR 03
97	1	11	ICPES	84BAR 03
Al (ug/g)				
92	5	11	ICPES	84BAR 03
100	3	11	ICPES	84BAR 03
103	7	11	ICPES	84BAR 03
Cr (ug/g)				
100	1	11	ICPES	84BAR 03
101	3	11	ICPES	84BAR 03
102	5	11	ICPES	84BAR 03
Cu (ug/g)				
96	3	11	ICPES	84BAR 03
99	4	11	ICPES	84BAR 03
101	3	11	ICPES	84BAR 03
Fe (ug/g)				
98	4	11	ICPES	84BAR 03
99	2	11	ICPES	84BAR 03
99	2	11	ICPES	84BAR 03

Conc	Uncer	Com	Method	Reference
Mg (ug/g)				
92	2	11	ICPES	84BAR 03
96	2	11	ICPES	84BAR 03
97	2	11	ICPES	84BAR 03
Mo (ug/g)				
94	3	11	ICPES	84BAR 03
97	3	11	ICPES	84BAR 03
99	4	11	ICPES	84BAR 03
Ni (ug/g)				
93	3	11	ICPES	84BAR 03
98	4	11	ICPES	84BAR 03
101	5	11	ICPES	84BAR 03
Pb (ug/g)				
96	4	11	ICPES	84BAR 03
97	2	11	ICPES	84BAR 03
100	3	11	ICPES	84BAR 03
Ti (ug/g)				
98	2	11	ICPES	84BAR 03
101	7	11	ICPES	84BAR 03
102	2	11	ICPES	84BAR 03

TABLE 1085-1: COMPILED DATA FOR NBS SRM 1085 WEAR METALS IN LUBRICATING OIL (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	METHOD
Ag	ug/g	291	300 ± 6 (3)	303	293 - 305	ICPES
Al	ug/g	296 ± 4	303 ± 6 (3)	303	297 - 309	ICPES
Cd	ng/g	< 40	---	---	---	---
Cl	ug/g	1.7	---	---	---	---
Co	ng/g	< 10	---	---	---	---
Cr	ug/g	298 ± 5	302 ± 8 (3)	304	294 - 309	ICPES
Cu	ug/g	295 ± 10	302 ± 2 (3)	302	299 - 304	ICPES
Fe	ug/g	300 ± 4	303.3 ± 1.5 (3)	303	302 - 305	ICPES
Mg	ug/g	297 ± 3	300 ± 5 (3)	302	295 - 304	ICPES
Mn	ng/g	< 5	---	---	---	---
Mo	ug/g	292 ± 11	293 ± 4 (3)	292	290 - 298	ICPES
Na	ng/g	< 60	---	---	---	---
Ni	ug/g	303 ± 7	300 ± 10 (3)	303	288 - 308	ICPES
Pb	ug/g	305	300.3 ± 1.2 (3)	301	299 - 301	ICPES
S	ug/g	4806	---	---	---	---
Si	ug/g	308	---	---	---	---
Sn	ug/g	296 ± 12	---	---	---	---
Ti	ug/g	300 ± 4	---	---	---	---
V	ng/g	< 300	---	---	---	---
Zn	ng/g	< 80	---	---	---	---

TABLE 1085-2: INDIVIDUAL DATA FOR NBS SRM 1085 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ag (ug/g)				
293	5	11	ICPES	84BAR 03
303	7	11	ICPES	84BAR 03
305	5	11	ICPES	84BAR 03
Al (ug/g)				
297	7	11	ICPES	84BAR 03
303	7	11	ICPES	84BAR 03
309	8	11	ICPES	84BAR 03
Cr (ug/g)				
294	4	11	ICPES	84BAR 03
304	3	11	ICPES	84BAR 03
309	6	11	ICPES	84BAR 03
Cu (ug/g)				
299	5	11	ICPES	84BAR 03
302	6	11	ICPES	84BAR 03
304	7	11	ICPES	84BAR 03

Conc	Uncer	Com	Method	Reference
Fe (ug/g)				
302	5	11	ICPES	84BAR 03
303	5	11	ICPES	84BAR 03
305	10	11	ICPES	84BAR 03
Mg (ug/g)				
295	8	11	ICPES	84BAR 03
302	10	11	ICPES	84BAR 03
304	8	11	ICPES	84BAR 03
Mo (ug/g)				
290	10	11	ICPES	84BAR 03
292	4	11	ICPES	84BAR 03
298	7	11	ICPES	84BAR 03
Ni (ug/g)				
288	7	11	ICPES	84BAR 03
303	5	11	ICPES	84BAR 03
308	5	11	ICPES	84BAR 03
Pb (ug/g)				
299	10	11	ICPES	84BAR 03
301	6	11	ICPES	84BAR 03
301	6	11	ICPES	84BAR 03

TABLE 1549-1: COMPILED COMPOSITION DATA FOR NBS SRM 1549 MILK POWDER (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean	(n)	RANGE	METHOD
Ag	ng/g	< 0.3	< 0.3		---	NAA
Al	ug/g	2	< 3		---	NAA
As	ng/g	1.9	1.77	(1)	---	NAA
Br	ug/g	12	11.85	(2)	11.6 - 12.1	NAA
Ca	%	1.3 ± 0.05	1.263	(2)	1.2 - 1.326	NAA
Cd	ng/g	0.5 ± 0.2	0.47	(1)	---	NAA
Cl	%	1.09 ± 0.02	1.085	(1)	---	NAA
Co	ng/g	4.1	4.12	(1)	---	NAA
Cr	ng/g	2.6 ± 0.7	2.5	(1)	---	NAA
Cs	ng/g	---	17.6	(1)	---	NAA
Cu	ng/g	700 ± 100	628	(2)	606 - 650	NAA
F	ng/g	200	---		---	---
Fe	ug/g	2.1	2.03	(2)	1.76 - 2.3	NAA
H2O	%	---	3.6	(1)	---	---
Hg	ng/g	0.3 ± 0.2	0.16	(1)	---	NAA
I	ug/g	3.38 ± 0.02	3.2	(1)	---	NAA
K	%	1.69 ± 0.03	1.735	(2)	1.69 - 1.78	NAA
Mg	ug/g	1200 ± 30	1190	(1)	---	NAA
Mn	ng/g	260 ± 60	281.5	(2)	233 - 330	NAA
Mo	ng/g	340	332	(2)	322 - 342	NAA
N	%	---	5.61	(1)	---	---
Na	ug/g	4970 ± 100	4890	(1)	---	NAA
Ni	ng/g	---	240	(1)	---	---
P	%	1.05	---		---	---
Pb	ng/g	19 ± 3	< 100		---	---
Rb	ug/g	11	12.75	(2)	12.4 - 13.1	NAA
S	ug/g	3510 ± 50	3514	(1)	---	IDMS
S-32/34	ratio	---	22.624	(1)	---	IDMS
S-33/34	ratio	---	0.1779	(1)	---	IDMS
Sb	ng/g	0.27	0.25	(1)	---	NAA
Sc	ng/g	---	0.94	(1)	---	NAA
Se	ng/g	110 ± 10	100	(2)	90 - 110	NAA
Si	ug/g	< 50	---		---	---
Sn	ng/g	< 500	1.9	(1)	---	NAA
Sr	ug/g	---	3.69	(1)	---	---
U	ng/g	---	< 1		---	NAA
W	ng/g	---	0.43	(1)	---	NAA
Zn	ug/g	46.1 ± 2.2	46.75	(2)	46.6 - 46.9	NAA

COMPOUND	CAS #	UNITS	NBS Mean	CONSENSUS Mean	(n)
Total Folates	---	ug/g	---	0.64	(1)
Total Pantothenates	---	ug/g	---	45.2	(1)
Thiamine	---	ug/g	---	4.5	(1)
Protein	---	%	---	35.8	(1)
Lactose	---	%	47	---	
l-Ascorbic acid	50817	ug/g	53	43.4	(1)
Niacin	59676	ug/g	---	9.8	(1)
Vitamin B6	65236	ug/g	---	4.8	(1)
Riboflavin	83885	ug/g	---	15	(1)

TABLE 1549-2: INDIVIDUAL DATA FOR NBS SRM 1549 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Total Folates (ug/g)				
0.64			VV	85TAN 01
Total Pantothenates (ug/g)				
45.2			VV	85TAN 01
Thiamine (ug/g)				
4.5			VV	85TAN 01
Protein (%)				
35.8			VV	85TAN 01
l-Ascorbic acid (ug/g)				
43.4			VV	85TAN 01
Niacin (ug/g)				
9.8			VV	85TAN 01
Vitamin B6 (ug/g)				
4.8			VV	85TAN 01
Riboflavin (ug/g)				
15			VV	85TAN 01
Ag (ng/g)				
<	0.3		RTNA	86GRE 01
Al (ug/g)				
<	3		RTNA	86GRE 01
As (ng/g)				
<	50	L	XRF	86GIA 01
1.77	0.11		RTNA	86GRE 01
Br (ug/g)				
11.6	0.04		ITNA	86GRE 01
12.1	0.2		XRF	86GIA 01
Ca (%)				
1.2	0.08		XRF	86GIA 01
1.326	0.026		ITNA	86GRE 01
Cd (ng/g)				
0.47	0.09		RTNA	86GRE 01
Cl (%)				
1.085	0.014		ITNA	86GRE 01
Co (ng/g)				
4.12	0.27		ITNA	86GRE 01
Cr (ng/g)				
<	600	L	XRF	86GIA 01
2.5	0.6		RTNA	86GRE 01
Cs (ng/g)				
17.6	0.7		ITNA	86GRE 01
Cu (ng/g)				
606	10		RTNA	86GRE 01
650	40		XRF	86GIA 01
Fe (ug/g)				
1.76	0.13		ITNA	86GRE 01
2.3	0.16		XRF	86GIA 01
H2O (%)				
3.6			VV	85TAN 01
Hg (ng/g)				
<	100	L	XRF	86GIA 01
0.16	0.015		RTNA	86GRE 01
I (ug/g)				
3.2	0.3		ITNA	86GRE 01
K (%)				
1.69	0.03		ITNA	86GRE 01
1.78	0.2		XRF	86GIA 01

TABLE 1549-2: INDIVIDUAL DATA FOR NBS SRM 1549 (cont.)

Conc	Uncer	Com	Method	Reference
Mg (ug/g)				
1190	30		ITNA	86GRE 01
Mn (ng/g)				
233	13		ITNA	86GRE 01
330	120		XRF	86GIA 01
Mo (ng/g)				
322	17		RTNA	86GRE 01
342	10		RTNA	84BYR 01
N (%)				
5.61			VV	85TAN 01
Na (ug/g)				
4890	60		ITNA	86GRE 01
Ni (ng/g)				
240	60		XRF	86GIA 01
Pb (ng/g)				
<	100	L	XRF	86GIA 01
Rb (ug/g)				
12.4	0.4		ITNA	86GRE 01
13.1	0.2		XRF	86GIA 01
S (ug/g)				
3514	29		IDMS	84KEL 01
S-32/34 (ratio)				
22.624			IDMS	84KEL 01
S-33/34 (ratio)				
0.1779			IDMS	84KEL 01
Sb (ng/g)				
0.25	0.03		RTNA	86GRE 01
Sc (ng/g)				
0.94			ITNA	86GAU 01
Se (ng/g)				
90	40		XRF	86GIA 01
110	3		ITNA	86GRE 01
Sn (ng/g)				
1.9	0.7		RTNA	86GRE 01
Sr (ug/g)				
3.69	0.1		XRF	86GIA 01
U (ng/g)				
<	1		DNA	86GAU 01
W (ng/g)				
0.43	0.03		RTNA	84BYR 01
Zn (ug/g)				
46.6	1.2		ITNA	86GRE 01
46.9	0.9		XRF	86GIA 01

TABLE 1566-1: COMPILED DATA FOR NBS SRM 1566 OYSTER TISSUE (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		OTHER METHODS					
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean	(n)	Method	Mean	(n)	Method
Ag	ug/g	0.89 ± 0.09	0.94 ± 0.11	(5)	0.89	0.86 - 1.14	0.89	(1)	0.95 ± 0.13	(4)	---		---			---		
Al	ug/g	---	255 ± 23	(5)	252	231 - 291	231	(1)	252 ± 12	(3)	291	(1)	---			---		
As	ug/g	13.4 ± 1.9	13.0 ± 1.2	(17)	13	11.1 - 15.5	13.5 ± 1.0	(7)	13.1 ± 1.6	(8)	12.7 ± 1.5	(3)	---			---		
B	ug/g	---	7	(1)	---	---	---		---		---		7	(1)	TCGS	---		
Ba	ug/g	---	5.18	(1)	---	---	---		---		5.18	(1)	---			---		
Br	ug/g	55	53 ± 6	(6)	51.7	45 - 62.6	---		53 ± 6	(6)	---		---			---		
Ca	ug/g	1500 ± 200	1400 ± 120	(14)	1426	1200 - 1549	---		1284 ± 78	(3)	1510 ± 20	(7)	1313	(2)	XRF	1300	(1)	MPOES
Cd	ug/g	3.5 ± 0.4	3.43 ± 0.16	(17)	3.43	3.2 - 3.68	3.46 ± 0.16	(8)	---		3.44 ± 0.18	(6)	3.49	(1)	IDMS	3.27	(2)	ASV
Ce	ng/g	---	420	(2)	---	410 - 430	---		420	(2)	---		---			---		
Cl	%	1.0	0.99 ± 0.02	(3)	0.98	0.97 - 1.01	---		0.99 ± 0.02	(3)	---		---			---		
Co	ng/g	400	370 ± 40	(12)	340	310 - 440	350 ± 17	(3)	360 ± 50	(8)	---		440	(1)	SSMS	---		
Cr	ng/g	690 ± 270	650 ± 80	(11)	650	540 - 750	680	(1)	660 ± 90	(4)	660 ± 60	(3)	645	(2)	XRF	---		
Cs	ng/g	---	40.5	(2)	---	31 - 50	---		40.5	(2)	---		---			---		
Cu	ug/g	63.0 ± 3.5	63 ± 2	(21)	62.9	60 - 69	64.9 ± 1.2	(5)	63 ± 5	(3)	61 ± 4	(10)	61	(1)	XRF	62.8	(2)	HPLC
Cu	ug/g	---	---		---	---	---		---		---		64	(1)	ICPMS	67	(1)	SSMS
Dy	ng/g	---	< 200		---	---	---		< 200		---		---			---		
Eu	ng/g	---	16 ± 3	(3)	15	13.9 - 20	---		16 ± 3	(3)	---		---			---		
F	ug/g	5.2	5.15	(2)	---	4.9 - 5.4	---		---		---		5.15	(2)	ISE	---		
Fe	ug/g	195 ± 34	195 ± 11	(22)	196	177 - 212.5	205 ± 5	(4)	194 ± 17	(5)	191 ± 10	(10)	202	(2)	HPLC	193	(1)	SSMS
H2O-	%	---	5.0	(2)	---	---	---		---		---		2.6	(1)	GRAV	---		
Hf	ng/g	---	80	(1)	---	---	---		80	(1)	---		---			---		
Hg	ng/g	57 ± 15	56 ± 4	(6)	56	49 - 60	54	(1)	54 ± 5	(3)	60	(2)	---			---		
Ho	ng/g	---	< 200		---	---	---		< 200		---		---			---		
I	ug/g	2.8	2.8 ± 0.3	(7)	2.79	2.34 - 3.21	---		2.8 ± 0.3	(7)	---		---			---		
K	%	0.969 ± 0.005	0.93 ± 0.07	(12)	0.9620	0.8 - 1.01	---		0.88 ± 0.07	(6)	0.98 ± 0.02	(4)	0.976	(1)	XRF	0.977	(1)	FE
La	ng/g	---	370	(2)	---	330 - 410	---		370	(2)	---		---			---		
Li	ng/g	---	323	(1)	---	---	323	(1)	---		---		---			---		
Lu	ng/g	---	< 60		---	---	---		< 60		---		---			---		
Mg	ug/g	1280 ± 90	1330 ± 100	(12)	1310	1150 - 1451	1280	(1)	1310 ± 130	(3)	1340 ± 100	(7)	1430	(1)	XRF	---		
Mn	ug/g	17.5 ± 1.2	17.0 ± 1.2	(22)	17.2	14.5 - 19.3	17 ± 2	(4)	16.1 ± 1.0	(5)	17.3 ± 0.6	(11)	19.3	(1)	ICPMS	14	(1)	SSMS
Mo	ng/g	< 200	140 ± 40	(4)	109	100 - 180	180	(1)	160	(1)	100	(1)	109	(1)	COLOR	---		
N	%	---	6.62	(1)	---	---	---		---		---		---			---		
Na	ug/g	5100 ± 300	4950 ± 220	(10)	4920	4600 - 5300	---		4780 ± 350	(6)	5025 ± 260	(4)	4920	(1)	FE	---		
Ni	ug/g	1.03 ± 0.19	1.01 ± 0.09	(9)	0.98	0.89 - 1.15	1.12	(2)	0.98	(1)	0.98 ± 0.08	(4)	0.89	(1)	POL	1.30	(1)	SSMS
Ni	ug/g	---	---		---	---	---		---		---		---			1.05	(1)	VOLT

TABLE 1566-1: COMPILED DATA FOR NBS SRM 1566 OYSTER TISSUE (cont.)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		OTHER METHODS					
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean	(n)	Method	Mean	(n)	Method
P	ug/g	8100	7600 ± 500	(14)	7700	6530 - 8200	7800 ± 200	(5)	7266	(1)	7700 ± 400	(5)	7060	(1)	XRF	6480	(2)	COLOR
P	ug/g	---	---		---	---	---		---		---		---			7800	(1)	CPAA
Pb	ng/g	480 ± 40	480 ± 30	(19)	480	420 - 540	468 ± 24	(13)	---		515 ± 19	(4)	505	(2)	ASV	---		
Pd	ng/g	---	< 2		---	---	---		< 2		---		---			---		
Rb	ug/g	4.45 ± 0.09	4.5 ± 0.5	(7)	4.49	3.8 - 5.35	5.35	(1)	4.5 ± 0.3	(5)	---		3.8	(1)	ICPMS	---		
S	ug/g	7600	8700 ± 700	(4)	8700	7977 - 9600	---		---		9600	(1)	8340	(2)	XRF	8700	(1)	CB
Sb	ng/g	---	190 ± 200	(3)	150	9.8 - 400	---		79.9	(2)	400	(1)	---			---		
Sc	ng/g	---	76 ± 8	(5)	72	69 - 89	---		76 ± 8	(5)	---		---			---		
Se	ug/g	2.1 ± 0.5	2.08 ± 0.20	(19)	2.07	1.7 - 2.42	2.08 ± 0.19	(7)	2.13 ± 0.12	(5)	1.9 ± 0.3	(3)	1.94	(1)	ASV	2.26	(1)	CSV
Se	ug/g	---	---		---	---	---		---		---		---			2.2	(2)	GC
Si	ug/g	---	1100	(1)	---	---	---		---		1100	(1)	---			---		
Sm	ng/g	---	69.5	(2)	---	63 - 76	---		69.5	(2)	---		---			---		
Sr	ug/g	10.36 ± 0.56	10.1 ± 0.7	(8)	9.9	8.58 - 10.99	10.1 ± 0.3	(3)	10.9	(2)	9.5 ± 0.8	(3)	---			---		
Ta	ng/g	---	5.5	(1)	---	---	---		5.5	(1)	---		---			---		
Tb	ng/g	---	15	(1)	---	---	---		15	(1)	---		---			---		
Th	ng/g	100	52	(1)	---	---	---		52	(1)	---		---			---		
Ti	ug/g	---	7.32	(1)	---	---	---		---		7.32	(1)	---			---		
Tl	ng/g	< 5	< 5		---	---	---		---		< 5		---			---		
U	ng/g	116 ± 6	121 ± 8	(4)	117	112 - 129	---		124 ± 6	(3)	---		112	(1)	IDMS	---		
V	ug/g	2.3 ± 0.1	2.7 ± 0.2	(8)	2.67	2.32 - 3.1	---		2.8	(2)	2.57	(2)	2.316	(1)	IDMS	2.67	(1)	COLOR
V	ug/g	---	---		---	---	---		---		---		2.80	(1)	SSMS	2.9	(1)	ICPMS
W	ug/g	---	< 1		---	---	---		< 1		---		---			---		
Yb	ng/g	---	< 500		---	---	---		< 500		---		---			---		
Zn	ug/g	852 ± 14	854 ± 24	(21)	851	805 - 887.6	868 ± 10	(4)	840 ± 60	(7)	844 ± 24	(9)	750	(1)	XRF	860	(1)	ICPMS
Zn	ug/g	---	---		---	---	---		---		---		---			851	(1)	SSMS

COMPOUND	CAS #	UNITS	NBS	CONSENSUS Mean	(n)
Total Folates	---	ug/g	---	1.2	(1)
Total Pantothenates	---	ug/g	---	10.2	(1)
Thiamine	---	ug/g	---	5.1	(1)
Protein	---	%	---	41.4	(1)
Nicotinic Acid	59676	ug/g	---	101.6	(1)
Vitamin B-6	65236	ug/g	---	1.4	(1)
Riboflavin	83885	ug/g	---	9.8	(1)

TABLE 1566-2: INDIVIDUAL DATA FOR NBS SRM 1566 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Total Folates (ug/g)				
1.2			VV	85TAN 01
Total Pantothenates (ug/g)				
10.2			VV	85TAN 01
Thiamine (ug/g)				
5.1			VV	85TAN 01
Protein (%)				
41.4			VV	85TAN 01
Nicotinic acid (ug/g)				
101.6			VV	85TAN 01
Vitamin B-6 (ug/g)				
1.4			VV	85TAN 01
Riboflavin (ug/g)				
9.8			VV	85TAN 01
Ag (ug/g)				
0.86	0.09		IENA	86CHI 01
0.88	0.05		ITNA	84ALK 01
0.89	0.02		FAA	85OKA 02
0.93	0.06		ITNA	86CHI 01
1.14	0.13		ITNA	86KRA 01
3.6	0.3		ICPMS	85PAR 01
Al (ug/g)				
231	9		FAA	86KRA 02
240	7		ITNA	86KRA 02
252	6		ITNA	86KRA 01
263	8		IENA	85GLA 02
291	24		ICPES	84NAD 01
366	9		HPLC	85BON 01
As (ug/g)				
9.2	0.6		ICPMS	85PAR 01
9.7			ICPES	84MAR 01
11.1	1.1		ICPES	83OLI 01
11.3	1		RTNA	85GAU 04
11.96	0.56		IENA	86CHI 01
As (ug/g) cont.				
12.1	1		HAA	85NAR 03
12.2	1.1		IENA	82GLA 02
12.4			IENA	84GLA 02
12.9	0.85		ICPES	84SUN 01
13	0.6		ITNA	86KRA 01
13	1.2		ITNA	79KOB 03
13.1	0.3		HAA	83MAH 01
13.17	0.34		HAA	81UTH 01
13.2	0.4		HAA	83MAH 04
13.4	0.3		HAA	84NAR 01
13.9	0.52		AA	85SAK 01
14	3		ICPES	84NAD 01
15	3		NAA	85LEP 01
15.5	0.3	11	HAA	82JON 01
15.87	3.5		ITNA	86CHI 01
B (ug/g)				
7	1		TCGS	82GLA 02
Ba (ug/g)				
<	4		NAA	85LEP 01
5.18	0.24		ICPES	84NAD 01
Br (ug/g)				
45	1.4		ITNA	79KOB 03
50.57	0.45		ITNA	86CHI 01
51.7	7.1		IENA	86CHI 01
52.9	3.3		IENA	86CHI 01
55	17		IENA	84GLA 11
62.6	0.4		NAA	85LEP 01
180			EXRF	81PAR 01
Ca (ug/g)				
880	3370	R	AA	80UCH 01
1200	400		CPXRF	85SIM 01
1200	400		NAA	85LEP 01
1300			MPOES	85ZHA 01
1300	100		ICPES	84NAD 01
1300	200		ITNA	86KRA 01
1353	146		RTNA	82MUR 01
1426	44		WXRF	84ALK 01
1499		6	ICPES	83CHA 01
1500	100		ICPES	85WHI 02
1500	100		ICPES	84SUN 01
1500	100		ICPES	84SUN 01

TABLE 1566-2: INDIVIDUAL DATA FOR NBS SRM 1566 (cont.)

Conc	Uncer	Com	Method	Reference
Ca (ug/g) cont.				
1510	20	11	ICPES	82JON 01
1530	30	11	ICPES	82JON 01
1549		6	ICPES	83CHA 01
1738	153		ITNA	84ALK 01
4500			EXRF	81PAR 01
Cd (ug/g)				
3.2	0.1		FAA	82SUZ 01
3.2	0.15		ICPES	84SUN 01
3.24	0.29		ASV	82SAT 02
3.25	0.05	6	ICPES	85OKA 02
3.3	0.3		ASV	82GAJ 01
3.31	0.03		AA	85OKA 02
3.4		14	FAA	80CHA 09
3.4	0.22		FAA	81CHA 01
3.43	0.07	6	ICPES	85OKA 02
3.49	0.01		IDMS	84BRO 03
3.5	0.5		AA	84KAN 01
3.54	0.04	11	ICPES	82JON 01
3.6		14	FAA	80CHA 09
3.6	0.1		ICPES	84SUN 01
3.6	0.1		FAA	85OKA 02
3.61	0.03	11	ICPES	82JON 01
3.68	0.06		FAA	83DEL 01
4.7	1		ICPES	84NAD 01
Ce (ng/g)				
410	180		ITNA	86KRA 01
430	20		NAA	85LEP 01
Cl (%)				
0.827	0.007		NAA	85LEP 01
0.97	0.04		IENA	84GLA 11
0.98	0.02		ITNA	86KRA 01
1.011	0.05		ITNA	84ALK 01
Co (ng/g)				
220	30		VOLT	84ADE 02
310	10		ITNA	84ALK 01
317	14		ITNA	86KRA 01
340		14	FAA	80CHA 09
340		14	FAA	80CHA 09
340	10		ITNA	86CHI 01
340	20		ITNA	79KOB 03
346	6		NAA	85LEP 01
370	10		FAA	85OKA 02
390	60		IENA	86CHI 01
420	70		IENA	86CHI 01
440	30		SSMS	81BER 01
440	70		ITNA	86CHI 01
1200	100		ICPES	81BER 01
Cr (ng/g)				
340	90	11	ICPES	82JON 01
540	310	11	CPXRF	84SIM 01
550	60		ITNA	84ALK 01
600	100		SSMS	81BER 01
600	200	11	ICPES	82JON 01
620	30		NAA	85LEP 01
650	50		ICPES	84SUN 01
680	20		FAA	85OKA 02
700	200		ITNA	79KOB 03
720	70		ICPES	84SUN 01
750	100		ITNA	86CHI 01
750	120	D	CPXRF	84SIM 02
750	120	11	CPXRF	84SIM 01
1100	200		ICPES	81BER 01
1450	310		ITNA	86KRA 01
Cs (ng/g)				
31	3		NAA	85LEP 01
50	4		ITNA	84ALK 01
Cu (ug/g)				
53		6	ICPES	83CHA 01
55		6	ICPES	83CHA 01
60	6		ICPES	84NAD 01
60	6.7		ITNA	84ALK 01
60.5	4.2	13	HPLC	85BON 01
60.7	0.7	6	ICPES	85OKA 02
60.9	0.5	6	ICPES	85OKA 02
61			XRF	80SUZ 02
61	2.1		RTNA	82MUR 01
61.8	0.9	11	ICPES	82JON 01
62.6	3.7		ICPES	84SUN 01
62.9	0.5	11	ICPES	82JON 01
63			AA	80UCH 01
64	2.1		ICPMS	85PAR 01
64.4	1		AA	85OKA 02
64.5	0.6		ICPES	81BER 01
65		14	FAA	80CHA 09
65			ICPES	84SUN 01
65.2	1.5	13	HPLC	85BON 01

TABLE 1566-2: INDIVIDUAL DATA FOR NBS SRM 1566 (cont.)

Conc	Uncer	Com	Method	Reference
Cu (ug/g) cont.				
66			FAA	81BER 01
66		14	FAA	80CHA 09
67	2		SSMS	81BER 01
69	14		ITNA	86KRA 01
128	2		AA	81UCH 01
189			EXRF	81PAR 01
Dy (ng/g)				
<	200		NAA	85LEP 01
Eu (ng/g)				
13.9	0.7		NAA	85LEP 01
15	8		ITNA	86KRA 01
20	10		ITNA	79KOB 03
F (ug/g)				
4.9	0.5		ISE	83KNA 01
5.4	1.2		ISE	84GLA 02
Fe (ug/g)				
161	2.5		ICPES	84SUN 01
171	10		ICPES	84NAD 01
177			ICPES	84SUN 01
178	4		ITNA	79KOB 03
178	32		ITNA	86KRA 01
179		6	ICPES	83CHA 01
180		6	ICPES	83CHA 01
190.5	9		ITNA	84ALK 01
191	5	11	ICPES	82JON 01
192	8		ICPES	81BER 01
193	4		SSMS	81BER 01
194	9	11	ICPES	82JON 01
196	6	11	ICPES	82JON 01
198		14	FAA	80CHA 09
200	4	13	HPLC	85BON 01
200	5	6	ICPES	85OKA 02
201	3	6	ICPES	85OKA 02
203	5	13	HPLC	85BON 01
203	8	11	ICPES	82JON 01
204	2		AA	85OKA 02
209			AA	80UCH 01
209		14	FAA	80CHA 09
210	4		NAA	85LEP 01
212.5	37		IENA	86CHI 01
218.9	9		ITNA	86CHI 01
576			EXRF	81PAR 01

Conc	Uncer	Com	Method	Reference
H2O- (%)				
2.6			GRAV	84NAR 01
2.6		D	GRAV	85NAR 03
7.3			VV	85TAN 01
Hf (ng/g)				
80	8		NAA	85LEP 01
Hg (ng/g)				
40			CVAA	84GLA 02
49	7		RTNA	84DRA 01
54	4		CVAA	86GAU 01
56	5		RTNA	84DEL 01
58	6	7	RTNA	80GAL 02
60			ICPES	84MAR 01
60	10		ICPES	84SUN 01
Ho (ng/g)				
<	200		NAA	85LEP 01
I (ug/g)				
2.337	0.074		RTNA	80GVA 01
2.5	0.2		IENA	84FAR 01
2.7	0.7		IENA	84GLA 11
2.79			NAA	79HEC 01
3.062	0.128	35	RTNA	81ALL 01
3.209	0.134		RTNA	81STR 01
3.209	0.134	34	RTNA	81ALL 01
K (%)				
0.475			MPOES	85ZHA 01
0.8	0.15		ITNA	86KRA 01
0.82	0.07		ITNA	86CHI 01
0.86	0.03		IENA	86CHI 01
0.87	0.03		ITNA	79KOB 03
0.96	0.03		NAA	85LEP 01
0.962	0.03		ITNA	84ALK 01
0.963	0.031		ICPES	85WHI 02
0.9763	0.0301		WXRF	84ALK 01
0.977			FE	80UCH 01
0.98	0.02	11	ICPES	82JON 01
0.98	0.04	11	ICPES	82JON 01
1.01	0.06		ICPES	84NAD 01
1.89			EXRF	81PAR 01

TABLE 1566-2: INDIVIDUAL DATA FOR NBS SRM 1566 (cont.)

Conc	Uncer	Com	Method	Reference
La (ng/g)				
330	110		ITNA	86KRA 01
410	20		NAA	85LEP 01
Li (ng/g)				
323	6		AA	85EVA 01
Lu (ng/g)				
<	60		NAA	85LEP 01
Mg (ug/g)				
980	30		ICPES	84NAD 01
1150			ICPES	84SUN 01
1200	100		ITNA	86KRA 01
1270		6	ICPES	83CHA 01
1277	72		RTNA	82MUR 01
1280			AA	80UCH 01
1310	20		ICPES	85WHI 02
1380	100		ICPES	84SUN 01
1410	20	11	ICPES	82JON 01
1430		6	ICPES	83CHA 01
1430	38		WXRF	84ALK 01
1430	40	11	ICPES	82JON 01
1451	213		ITNA	84ALK 01
Mn (ug/g)				
3			XRF	80SUZ 02
14	2		SSMS	81BER 01
14.5			FAA	81BER 01
15	1.2		ITNA	79KOB 03
15	2.4		ITNA	84ALK 01
15.3	0.15		ICPES	84SUN 01
16.1	1.1		ICPES	84NAD 01
16.57	0.97		IENA	86CHI 01
16.7		6	ICPES	83CHA 01
16.7		6	ICPES	83CHA 01
17	1		ITNA	86KRA 01
17.1	0.4		RTNA	82MUR 01
17.2	0.2	11	ICPES	82JON 01
17.2	0.6		FAA	81CHA 01
17.3	0.3	6	ICPES	85OKA 02
17.4	0.6	11	ICPES	82JON 01
17.4	0.6	6	ICPES	85OKA 02
17.5	0.7		ICPES	81BER 01
17.8	0.9	11	ICPES	82JON 01
17.9	0.42		ICPES	84SUN 01
17.9	1.3		ICPES	85WHI 02

Conc	Uncer	Com	Method	Reference
Mn (ug/g) cont.				
18.6	0.3		AA	85OKA 02
19			AA	80UCH 01
19.3	1.1		ICPMS	85PAR 01
21	3		NAA	85LEP 01
49			EXRF	81PAR 01
Mo (ng/g)				
<	70	L	ICPES	82JON 01
100	100	11	ICPES	82JON 01
109	72		COLOR	85EVA 02
160	40		IENA	86CHI 01
180	20		FAA	84GOH 01
N (%)				
6.62			VV	85TAN 01
Na (ug/g)				
4200	300		IENA	86CHI 01
4600	240		ITNA	79KOB 03
4700	200		ITNA	86CHI 01
4800		6	ICPES	83CHA 01
4800		6	ICPES	83CHA 01
4920			FE	80UCH 01
5030	40		ITNA	86KRA 01
5070	20		NAA	85LEP 01
5082	258		ITNA	84ALK 01
5200	400		ICPES	84NAD 01
5300	100		ICPES	85WHI 02
9750			MPOES	85ZHA 01
Ni (ug/g)				
0.89			POL	85UTO 01
0.92	0.04	11	ICPES	82JON 01
0.95	0.04		ICPES	84SUN 01
0.97	0.09	11	ICPES	82JON 01
0.98	0.1		IENA	86CHI 01
1.05	0.02		VOLT	84ADE 02
1.1			FAA	81BER 01
1.1	0.17		ICPES	84SUN 01
1.15	0.02		FAA	85OKA 02
1.3	0.1		SSMS	81BER 01
1.6	0.3		ICPES	81BER 01
1.6	0.5		NAA	85LEP 01

TABLE 1566-2: INDIVIDUAL DATA FOR NBS SRM 1566 (cont.)

Conc	Uncer	Com	Method	Reference
P (ug/g)				
5600	200		ICPES	84NAD 01
6420	150	11	COLOR	84LIN 01
6530	120	11	COLOR	84LIN 01
7000	100		ICPES	84SUN 01
7057	231		WXRF	84ALK 01
7266	1144		IENA	84ALK 01
7600	400	6	FAA	81LAN 01
7700	100		ICPES	85WHI 02
7700	400	14	FAA	84LIN 01
7800	100		CPAA	83MAS 02
7800	200	11	ICPES	82JON 01
7800	300	6	FAA	81LAN 01
7800	500	14	FAA	84LIN 01
7900	100	11	ICPES	82JON 01
8100	900	14	FAA	84LIN 01
8200			ICPES	84SUN 01
Pb (ng/g)				
420	20	14	FAA	84LUN 01
440	40		FAA	82RAI 01
450		6	FAA	81HIN 01
450		6	FAA	82KOI 01
460	50	14	FAA	84LUN 01
460	60	14	FAA	84LUN 01
470	10		FAA	81CHA 01
480		6	FAA	82KOI 01
480		6	FAA	81HIN 01
480	10		FAA	82ATS 02
480	20		FAA	85OKA 02
500		14	FAA	80CHA 09
500	20		ASV	82GAJ 01
500	200	11	ICPES	82JON 01
500	300	11	ICPES	82JON 01
510		14	FAA	80CHA 09
510	60		ASV	82SAT 02
520	30		ICPES	84SUN 01
540	10		ICPES	84SUN 01
560	40	14	FAA	84LUN 01
2600	200		ICPMS	85PAR 01
Pd (ng/g)				
<	2		RTNA	85BEM 01

Conc	Uncer	Com	Method	Reference
Rb (ug/g)				
3.8	0.5		ICPMS	85PAR 01
4.2	0.6		ITNA	86KRA 01
4.27	0.19		ITNA	86CHI 01
4.49	0.05		ITNA	84ALK 01
4.6	0.1		NAA	85LEP 01
5.04	0.1		IENA	86CHI 01
5.35	0.32		AA	85EVA 01
20			EXRF	81PAR 01
S (ug/g)				
7977	248		WXRF	84ALK 01
8700	200		WXRF	86BOW 01
8700	200		CB	86BOW 01
9600	200		ICPES	85WHI 02
Sb (ng/g)				
9.8	1.2		NAA	85LEP 01
150	40		ITNA	79KOB 03
400	300		ICPES	83OLI 01
Sc (ng/g)				
15	2		ITNA	86CHI 01
69			ITNA	84GLA 11
71	3		ITNA	86KRA 01
72	4		NAA	85LEP 01
79.5			ITNA	86GAU 01
89	6		ITNA	79KOB 03
Se (ug/g)				
1.6	0.4		NAA	85LEP 01
1.7	0.14		ICPES	84SUN 01
1.7	0.2		ICPES	83OLI 01
1.8	0.2		HAA	82MAY 01
1.94	0.07		ASV	84ADE 01
2	0.2		HAA	84NAR 01
2	0.2		HAA	85NAR 03
2.02	0.9		ITNA	84ALK 01
2.04	0.04		IENA	86CHI 01
2.05	0.05		HAA	82JUL 01
2.07	0.03		FAA	82JUL 01
2.1	0.2		ITNA	84LAN 01
2.18	0.25	11	GC	84SIU 01
2.21	0.08		ITNA	86CHI 01
2.22	0.03	11	HAA	82JON 01

TABLE 1566-2: INDIVIDUAL DATA FOR NBS SRM 1566 (cont.)

Conc	Uncer	Com	Method	Reference
Se (ug/g) cont.				
2.23	0.26	11	GC	84SIU 01
2.26	0.24		CSV	83AHM 02
2.3			ICPES	84MAR 01
2.3	0.3		ITNA	86KRA 01
2.42	0.08	11	HAA	82JON 01
2.6	0.3		HAA	85CUT 01
Se(IV) (ug/g)				
<	0.01		HAA	85CUT 01
Se(VI) (ug/g)				
<	0.01		HAA	85CUT 01
Si (ug/g)				
1100	100		ICPES	84NAD 01
Sm (ng/g)				
63	15		ITNA	86KRA 01
76	7		NAA	85LEP 01
Sr (ug/g)				
8.58	0.42		ICPES	84NAD 01
9.87	0.35	6	ICPES	85OKA 02
9.9	0.68		AA	85EVA 01
9.9	1.1		FAA	82SUZ 03
9.96	0.2	6	ICPES	85OKA 02
10.5	0.3		AA	85OKA 02
10.8	0.6		IENA	85GAU 04
10.99	0.76		IENA	86CHI 01
92			EXRF	81PAR 01
Ta (ng/g)				
5.5	0.6		NAA	85LEP 01
Tb (ng/g)				
15	2		NAA	85LEP 01
Th (ng/g)				
52	2		NAA	85LEP 01

Conc	Uncer	Com	Method	Reference
Ti (ug/g)				
<	200		NAA	85LEP 01
7.32	0.91		ICPES	84NAD 01
Tl (ng/g)				
<	5		ICPES	84SUN 01
U (ng/g)				
112	1		IDMS	83KEL 01
117	8		DNA	85GAU 04
126			DNA	84GLA 02
129			DNA	84GLA 11
V (ug/g)				
1.64	0.05		RTNA	82MUR 01
2.316	0.006		IDMS	85FAS 02
2.44	0.06	11	ICPES	82JON 01
2.5	0.2		ITNA	86KRA 01
2.67			COLOR	85EVA 02
2.7	0.4		ICPES	81BER 01
2.8	0.3		SSMS	81BER 01
2.9	0.4		ICPMS	85PAR 01
3.1	0.6		NAA	85LEP 01
W (ug/g)				
<	1		NAA	85LEP 01
Yb (ng/g)				
<	500		NAA	85LEP 01
Zn (ug/g)				
716	30		ICPES	84NAD 01
730	10		NAA	85LEP 01
746	2.2		ICPES	84SUN 01
750			XRF	80SUZ 02
805	7	6	ICPES	85OKA 02
805	36		ITNA	84ALK 01
822	4	6	ICPES	85OKA 02
824	9		ICPES	85WHI 02
843	12	11	ICPES	82JON 01
848	5.7		ICPES	84SUN 01
848.5	4.5		IENA	86CHI 01
850	14		ITNA	86KRA 01

TABLE 1566-2: INDIVIDUAL DATA FOR NBS SRM 1566 (cont.)

Conc	Uncer	Com	Method	Reference
Zn (ug/g) cont.				
851	37		SSMS	81BER 01
851	43		ICPES	81BER 01
859	9	11	ICPES	82JON 01
860			AA	80UCH 01
860	6		AA	85OKA 02
860	50		ICPMS	85PAR 01
869	8	11	ICPES	82JON 01
870	35		ITNA	79KOB 03
874		14	FAA	80CHA 09
878	15	11	ICPES	82JON 01
880		14	FAA	80CHA 09
884.6	17		ITNA	86CHI 01
887.6	10		IENA	86CHI 01
2953			EXRF	81PAR 01

TABLE 1567-1: COMPILED DATA FOR NBS SRM 1567 WHEAT FLOUR (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		OTHER METHODS		
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean	(n)	Method
Al	ug/g	---	17	(1)	---	---	---		---		---		17	(1)	SIMS
As	ng/g	6	5.7 ± 0.3	(10)	5.6	5.4 - 6.3	6	(1)	5.52 ± 0.12	(7)	6	(1)	---		
B	ug/g	---	1.5	(1)	---	---	---		---		---		1.5	(1)	TCGS
Be	ng/g	---	< 30		---	---	---		---		< 30		---		
Bi	ng/g	---	< 8		---	---	---		---		< 8		---		
Br	ug/g	9	8.4 ± 1.2	(7)	8.5	6.3 - 9.9	---		8.7 ± 0.9	(5)	---		7.4	(2)	XRF
Ca	ug/g	190 ± 10	190 ± 11	(17)	195	170 - 208	185 ± 10	(6)	---		197 ± 4	(8)	208	(1)	FAE
Ca	ug/g	---	---		---	---	---		---		---		174	(1)	XRF
Cd	ng/g	32 ± 7	30 ± 5	(10)	30	20 - 40	30	(1)	30.8	(2)	35 ± 8	(6)	24.5	(2)	ASV
Cl	ug/g	---	591 ± 20	(4)	580	570 - 615	---		591 ± 20	(4)	---		---		
Co	ng/g	---	21	(1)	---	---	---		21	(1)	---		---		
Cr	ng/g	---	290 ± 80	(4)	240	225 - 400	232	(2)	---		350	(2)	---		
Cs	ng/g	---	3.5	(1)	---	---	---		3.5	(1)	---		---		
Cu	ug/g	2.0 ± 0.3	1.96 ± 0.10	(20)	2	1.78 - 2.08	2	(2)	1.93 ± 0.10	(4)	2.04 ± 0.08	(10)	2.035	(1)	IDMS
Cu	ug/g	---	---		---	---	---		---		---		1.80	(1)	ASV
Cu	ug/g	---	---		---	---	---		---		---		1.84	(2)	XRF
F	ng/g	---	40	(1)	---	---	---		---		---		40	(1)	ISE
Fe	ug/g	18.3 ± 1.0	17.8 ± 1.2	(18)	17.7	15.2 - 19.6	15.9 ± 1.0	(3)	17.2	(1)	18.4 ± 0.9	(12)	15.2	(1)	FAE
Fe	ug/g	---	---		---	---	---		---		---		17.3	(2)	XRF
Ge	ng/g	---	< 20		---	---	---		---		---		---		
H2O-	%	---	10.6	(2)	---	9.8 - 11.5	---		---		---		11.5	(1)	GRAV
Hg	ng/g	1.0 ± 0.8	1.08 ± 0.10	(4)	1	1.0 - 1.22	---		1.08 ± 0.10	(4)	---		---		
I	ng/g	---	1.97	(1)	---	---	---		1.97	(1)	---		---		
K	ug/g	1360 ± 40	1300 ± 90	(12)	1310	1130 - 1500	1190 ± 110	(3)	1392	(1)	1316 ± 100	(8)	1220	(1)	XRF
La	ng/g	---	1.8	(1)	---	---	---		1.8	(1)	---		---		
Li	ng/g	---	41.4	(1)	---	---	41.4	(1)	---		---		---		
Mg	ug/g	---	400 ± 21	(10)	398	370 - 429	376	(2)	---		406 ± 18	(8)	---		
Mn	ug/g	8.5 ± 0.5	8.6 ± 0.6	(21)	8.55	7.2 - 9.9	9.1 ± 1.0	(3)	8.5 ± 0.2	(3)	8.4 ± 0.2	(11)	6.7	(1)	AE-AF
Mn	ug/g	---	---		---	---	---		---		---		8.70	(2)	XRF
Mo	ng/g	400	420 ± 30	(8)	420	380 - 470	---		445	(2)	402 ± 18	(5)	430	(1)	COLOR

TABLE 1567-1: COMPILED DATA FOR NBS SRM 1567 WHEAT FLOUR (cont.)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		OTHER METHODS		
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method
N	%	---	2.2	(1)	---	---	---		---		---		---		
Na	ug/g	8.0 ± 1.5	11.1 ± 1.8	(4)	10.4	9 - 13	---		11.8 ± 1.3	(3)	---		9	(1)	FAE
Ni	ng/g	180	190 ± 30	(4)	175	160 - 230	175	(1)	---		180	(2)	230	(1)	POL
Ni	ng/g	---	---		---	---	---		---		---		110	(1)	XRF
P	ug/g	---	1390 ± 30	(7)	1390	1350 - 1450	---		---		1390 ± 30	(7)	---		
Pb	ug/g	0.02 ± 0.01	0.018	(1)	---	---	---		---		---		0.018	(1)	ASV
Rb	ug/g	1	0.95 ± 0.03	(3)	0.94	0.93 - 0.99	0.93	(1)	0.99	(1)	---		0.94	(1)	XRF
S	ug/g	---	1810 ± 110	(7)	1810	1623 - 1980	---		---		1860	(1)	1810 ± 130	(5)	CB
S	ug/g	---	---		---	---	---		---		---		1780	(1)	XRF
Sb	ng/g	---	19.85	(2)	---	1.7 - 38	---		19.8	(2)	---		---		
Sc	ng/g	---	0.58	(2)	---	0.5 - 0.67	---		0.58	(2)	---		---		
Se	ug/g	1.1 ± 0.2	1.03 ± 0.08	(35)	1.03	0.87 - 1.17	0.98 ± 0.06	(14)	1.11 ± 0.05	(11)	0.97 ± 0.14	(4)	1	(1)	CSV
Se	ug/g	---	---		---	---	---		---		---		0.95	(1)	GC-MS
Se	ug/g	---	---		---	---	---		---		---		1.03 ± 0.08	(5)	XRF
Sm	ng/g	---	0.82	(1)	---	---	---		0.82	(1)	---		---		
Sr	ug/g	---	0.97 ± 0.11	(4)	0.97	0.82 - 1.08	0.97	(1)	---		1.05	(2)	0.82	(1)	SR
Te	ng/g	< 2	---		---	---	---		---		---		---		
Tl	ng/g	---	2.7 ± 0.6	(3)	3.0	2.0 - 3.0	---		---		---		2.7 ± 0.6	(3)	ASV
U	ng/g	---	0.95	(1)	---	---	---		0.95	(1)	---		---		
V	ng/g	---	11.25	(2)	---	11.2 - 11.3	---		11.2	(1)	---		11.3	(1)	COLOR
Zn	ug/g	10.6 ± 1.0	10.6 ± 0.4	(17)	10.6	9.9 - 11.3	9.9	(1)	10.9	(1)	10.7 ± 0.4	(14)	10.3	(1)	XRF

COMPOUND	CAS #	UNITS	NBS	CONSENSUS Mean	(n)
Total Folates	---	ug/g	---	0.22	(1)
Total Pantothenates	---	ug/g	---	3.1	(1)
Thiamine	---	ug/g	---	2.5	(1)
Protein	---	%	---	12.4	(1)
Nicotinic Acid	59676	ug/g	---	14.7	(1)
Vitamin B-6	65236	ug/g	---	0.72	(1)
Riboflavin	83885	ug/g	---	0.56	(1)

TABLE 1567-2: INDIVIDUAL DATA FOR NBS SRM 1567 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Total Folates (ug/g)				
0.22			VV	85TAN 01
Total Pantothenates (ug/g)				
3.1			VV	85TAN 01
Thiamine (ug/g)				
2.5			VV	85TAN 01
Protein (%)				
12.4			VV	85TAN 01
Nicotinic acid (ug/g)				
14.7			VV	85TAN 01
Vitamin B-6 (ug/g)				
0.72			VV	85TAN 01
Riboflavin (ug/g)				
0.56			VV	85TAN 01
Al (ug/g)				
17			SIMS	83RAM 01
As (ng/g)				
<	30	L	XRF	86GIA 01
5.4	0.5		RTNA	78GIL 01
5.4	0.5	7	RTNA	77GIL 03
5.4	0.5	7	RTNA	80GAL 02
5.6	1	7	RTNA	77GIL 03
5.6	1	7	RTNA	80GAL 02
5.6	1		RTNA	84DEL 01
5.7			RTNA	85TIA 01
6	0.3		HAA	85YAM 01
6	1	H	ICPES	82HAH 01
6.3	0.4		RTNA	84BYR 02
30	10		COLOR	77BUR 01
B (ug/g)				
1.5			TCGS	82GLA 02

Conc	Uncer	Com	Method	Reference
Be (ng/g)				
<	30	L	ICPES	82KUE 01
Bi (ng/g)				
<	8	L	ICPES	82HAH 01
Br (ug/g)				
6.3	0.4		CPXRF	84BIS 01
7.6	0.7		IENA	84GLA 11
8.3			ITNA	85GAU 04
8.5	1.4		XRF	86GIA 01
8.6			IENA	85GAU 04
9.3			ITNA	86GAU 01
9.9	1.5		ITNA	78GIL 01
Ca (ug/g)				
110	4		CPXRF	84BIS 01
170	20		ICPES	85WHI 02
173		38	AA	81YAS 01
174	10		XRF	86GIA 01
179		38	AA	81YAS 01
181		38	AA	81YAS 01
183		38	AA	81YAS 01
193			ICPES	81WOL 01
194	6	11	ICPES	82JON 01
195	2	6	ICPES	82KUE 01
195	3	6	ICPES	82KUE 01
196	2	6	ICPES	82KUE 01
197		38	AA	81YAS 01
198	5	1	ICPES	81WOL 02
199		38	AA	81YAS 01
199	4	11	ICPES	82JON 01
204		1	ICPES	81WOL 02
208	34		FAE	83MAR 04
217	9	12	FAA	85CAR 02
Cd (ng/g)				
20			ASV	82GAJ 01
29	4		ASV	82SAT 02
30	1	7	RTNA	80GAL 02
30	10		FAA	80SCH 08
30	20	6	ICPES	82KUE 01
30	20	6	ICPES	82KUE 01
30	20	6	ICPES	82KUE 01
31.7	1		RTNA	84BYR 02
32	3		ICPES	83SCH 04
40	10	11	ICPES	82JON 01
50	30	11	ICPES	82JON 01

TABLE 1567-2: INDIVIDUAL DATA FOR NBS SRM 1567 (cont.)

Conc	Uncer	Com	Method	Reference
Cl (ug/g)				
570	50		IENA	84GLA 11
580	30		ITNA	85GAU 04
600	30		ITNA	84GLA 11
615			ITNA	86GAU 01
Co (ng/g)				
21	4		ITNA	78GIL 01
1970	280		RTNA	84BYR 02
Cr (ng/g)				
<	250	L	ICPES	82KUE 01
<	250	L	ICPES	82KUE 01
<	250	L	ICPES	82KUE 01
<	300	L	XRF	86GIA 01
225	100		FAA	85CAR 01
240	10		FAA	83CAR 02
300	100	11	ICPES	82JON 01
400	200	11	ICPES	82JON 01
760	160		FAE	83MAR 04
Cs (ng/g)				
<	200	L	ITNA	82GLA 02
3.5			ITNA	86GAU 01
Cu (ug/g)				
1.6	0.3	12	FAA	85CAR 02
1.78			RTNA	85TIA 01
1.8			ASV	83HOL 01
1.8	0.1		CPXRF	84BIS 01
1.8	0.2	11	ICPES	82JON 01
1.88	0.12		XRF	86GIA 01
1.9	0.2	11	ICPES	82JON 01
1.95	0.02		RTNA	84BYR 02
2.00	0.01	6	ICPES	82KUE 01
2.0	0.1		ICPES	81KNA 01
2.0	0.2	7	RTNA	80GAL 02
2.0	0.2		RTNA	78GIL 01
2.0	0.2	2	FAA	84MIL 01
2.0	0.3		ICPES	80SCH 08
2.0	0.6	2	FAA	84MIL 01
2.02	0.08	1	ICPES	81WOL 02
2.035	0.007		IDMS	84BRO 03
2.04			ICPES	81WOL 01
2.06	0.03	6	ICPES	82KUE 01
2.06	0.04	6	ICPES	82KUE 01
2.08		1	ICPES	81WOL 02
Cu (ug/g) cont.				
2.2	0.1		ICPES	83SCH 04
2.6	0.2		FAE	83MAR 04
2.6	1	12	FAA	85CAR 02
F (ng/g)				
<	200	L	ISE	84GLA 02
40	20		ISE	83KNA 01
Fe (ug/g)				
11.5	6.1	12	FAE	83MAR 04
14.8	1.2	2	FAA	84MIL 01
15.2	0.5	12	FAE	83MAR 04
16.2	0.5	2	FAA	84MIL 01
16.7	3.8	12	FAA	85CAR 02
17	1	11	ICPES	82JON 01
17.1	0.8	11	ICPES	82JON 01
17.1	4.8		XRF	86GIA 01
17.2	0.6		ITNA	78GIL 01
17.5	1.2		CPXRF	84BIS 01
17.7	0.7	6	ICPES	82KUE 01
17.9	0.8	11	ICPES	82JON 01
18	1	11	ICPES	82JON 01
18.4	0.8	1	ICPES	81WOL 02
18.4	1	6	ICPES	82KUE 01
18.6	1.2		ICPES	80SCH 08
18.7	2.1	6	ICPES	82KUE 01
19.3	1.1		ICPES	81KNA 01
19.6		1	ICPES	81WOL 02
19.6			ICPES	81WOL 01
23.6	3.9	12	FAA	85CAR 02
Ge (ng/g)				
<	20	L	ICPES	82HAN 01
H2O (%)				
9.8			VV	85TAN 01
H2O- (%)				
11.5			GRAV	84NAR 01
11.5		D	GRAV	85NAR 03

TABLE 1567-2: INDIVIDUAL DATA FOR NBS SRM 1567 (cont.)

Conc	Uncer	Com	Method	Reference
Hg (ng/g)				
< 60		L	XRF	86GIA 01
1	0.3	7	RTNA	80GAL 02
1	0.3		RTNA	78GIL 01
1.08	0.15		RTNA	84DEL 01
1.22	0.16		RTNA	84BYR 02
I (ng/g)				
1.97	0.28		RTNA	84BYR 02
9	5		IENA	84GLA 11
K (ug/g)				
100	20		FAE	83MAR 04
1061	114	12	FAA	85CAR 02
1130	190		ICPES	85WHI 02
1220	130		XRF	86GIA 01
1240	30	2	FAA	84MIL 01
1260	30	2	FAA	84MIL 01
1300	50	11	ICPES	82JON 01
1310	40	11	ICPES	82JON 01
1320	10	6	ICPES	82KUE 01
1320	10	6	ICPES	82KUE 01
1320	60	1	ICPES	81WOL 02
1330	20	6	ICPES	82KUE 01
1392	37		ITNA	78GIL 01
1500		1	ICPES	81WOL 02
1583	34		CPXRF	84BIS 01
La (ng/g)				
1.8	0.3		RTNA	86TSU 01
Li (ng/g)				
41.4	8		AA	85EVA 01
Mg (ug/g)				
370	20		ICPES	85WHI 02
373	11	2	FAA	84MIL 01
378	8	2	FAA	84MIL 01
397	14	1	ICPES	81WOL 02
398	10	6	ICPES	82KUE 01
406	3	6	ICPES	82KUE 01
408		1	ICPES	81WOL 02
419	4	6	ICPES	82KUE 01
420	10	11	ICPES	82JON 01
429	9	11	ICPES	82JON 01
466	5		SIMS	83RAM 01

Conc	Uncer	Com	Method	Reference
Mn (ug/g)				
5.7	0.8	12	FAA	85CAR 02
6.7	1.2		AE+AF	82GOL 01
7.2	1		ICPES	85WHI 02
7.9	0.2	2	FAA	84MIL 01
8	0.4	11	ICPES	82JON 01
8.2	0.3	11	ICPES	82JON 01
8.2	1.8		XRF	86GIA 01
8.3			ICPES	81WOL 01
8.3	0.03		RTNA	84BYR 02
8.3	0.2		ICPES	80SCH 08
8.3	0.2	11	ICPES	82JON 01
8.55	0.15	6	ICPES	82KUE 01
8.58	0.16	6	ICPES	82KUE 01
8.6			ITNA	85GAU 04
8.6	0.4		ITNA	78GIL 01
8.63	0.38	1	ICPES	81WOL 02
8.67	0.12	6	ICPES	82KUE 01
8.7		1	ICPES	81WOL 02
8.8	0.5		ICPES	83SCH 04
9.2	1.4		CPXRF	84BIS 01
9.6	3.1	12	FAA	85CAR 02
9.7	0.4	2	FAA	84MIL 01
9.9	0.5		ICPES	81KNA 01
Mo (ng/g)				
310			RTNA	85TIA 01
380	30	6	ICPES	82KUE 01
390	90	11	ICPES	82JON 01
400	40	6	ICPES	82KUE 01
420	20		RTNA	84BYR 02
420	40	6	ICPES	82KUE 01
420	70	11	ICPES	82JON 01
430	63		COLOR	85EVA 02
470	70		RTNA	84MOK 02
N (%)				
2.2			VV	85TAN 01
Na (ug/g)				
< 20			ICPES	85WHI 02
9	0.8		FAE	83MAR 04
10.4	2.5		ITNA	78GIL 01
12			ITNA	84GLA 11
13	3		ITNA	85GAU 04

TABLE 1567-2: INDIVIDUAL DATA FOR NBS SRM 1567 (cont.)

Conc	Uncer	Com	Method	Reference
Ni (ng/g)				
< 500		L	ICPES	82KUE 01
< 500		L	ICPES	82KUE 01
< 500		L	ICPES	82KUE 01
110	60		XRF	86GIA 01
160	40	11	ICPES	82JON 01
175			FAA	85LON 01
200	40	11	ICPES	82JON 01
230			POL	83HOL 01
1500	100		CPXRF	84BIS 01
P (ug/g)				
150			ICPES	85WHI 02
1350	20	6	ICPES	82KUE 01
1370	10	6	ICPES	82KUE 01
1370	50	11	ICPES	82JON 01
1390	50	1	ICPES	81WOL 02
1400	10	6	ICPES	82KUE 01
1420	30	11	ICPES	82JON 01
1450		1	ICPES	81WOL 02
Pb (ug/g)				
< 0.02		L	ASV	82GAJ 01
< 0.1		L	ICPES	82JON 01
< 0.1		L	ICPES	82JON 01
< 3.8		L	ICPES	82KUE 01
< 3.8		L	ICPES	82KUE 01
< 3.8		L	ICPES	82KUE 01
< 100		L	XRF	86GIA 01
0.018	0.003		ASV	82SAT 02
Rb (ug/g)				
0.93	0.13		AA	85EVA 01
0.94	0.06		XRF	86GIA 01
0.99	0.16		ITNA	78GIL 01
S (ug/g)				
1623	32		CB	86GAU 01
1780	60		WXRF	86BOW 01
1790		D	CB	85JAC 01
1790	100	6	CB	84JAC 01
1810		D	CB	85JAC 01
1810	70	6	CB	84JAC 01
1830	140		CB	86BOW 01
1860	50		ICPES	85WHI 02
1980	210		CB	84GLA 11

Conc	Uncer	Com	Method	Reference
Sb (ng/g)				
< 2		L	ICPES	82HAH 01
1.7	0.08		RTNA	84BYR 02
38	1		RTNA	78GIL 01
Sc (ng/g)				
0.5			ITNA	84GLA 11
0.67			ITNA	86GAU 01
Se (ug/g)				
0.7			FAA	81MEY 01
0.76	0.08	11	HAA	82JON 01
0.82	0.08		ICPES	81WOL 01
0.87			HAA	81HAH 01
0.87	0.06	H	ICPES	82HAH 01
0.901	0.051		HAA	80RAP 02
0.91	0.03	11	HAA	82JON 01
0.92	0.06		XRF	86GIA 01
0.94	0.08		HAA	83KOL 01
0.95	0.04		GC-MS	81REA 02
0.96	0.08		HAA	81MEY 01
0.98		11	HAA	85PIW 01
1			CSV	81HAN 01
1	0.1		HAA	85YAM 01
1	0.1		HAA	85NAR 03
1	0.1		HAA	80VIJ 01
1	0.1	11	XRF	80RAP 01
1	0.2		HAA	85NAR 01
1	0.2		HAA	81REA 01
1.03	0.04		HAA	81HAN 01
1.04	0.01		EXRF	80RAP 03
1.05	0.09	7	RTNA	77GIL 03
1.05	0.09	7	RTNA	80GAL 02
1.05	0.09	7	RTNA	77GIL 03
1.07		11	HAA	85PIW 01
1.08			ICPES	84MIA 01
1.09	0.11	7	RTNA	80GAL 02
1.1	0.02	11	XRF	80RAP 01
1.1	0.02		XRF	81KNA 01
1.1	0.09		ICPES	85NAK 01
1.1	0.1		HAA	84NAR 01
1.11	0.05		RTNA	78GIL 01
1.12	0.01	7	RTNA	77GIL 03
1.12	0.01		ITNA	80GAL 02
1.12	0.01		ITNA	78GIL 01
1.17	0.15		RTNA	84DEL 01
1.17	0.18	7	RTNA	80GAL 02
1.17	0.18	7	RTNA	77GIL 03

TABLE 1567-2: INDIVIDUAL DATA FOR NBS SRM 1567 (cont.)

Conc	Uncer	Com	Method	Reference
Sm (ng/g)				
0.82	0.05		RTNA	86TSU 01
Sn (ng/g)				
<	20	L	ICPES	82HAH 01
Sr (ug/g)				
0.82	0.04		XRF	86GIA 01
0.97	0.2		AA	85EVA 01
1.02		1	ICPES	81WOL 02
1.08	0.06	1	ICPES	81WOL 02
Tl (ng/g)				
<	3	11	ASV	84LIE 01
2		11	ASV	84LIE 01
3		11	ASV	84LIE 01
3		11	ASV	84LIE 01
U (ng/g)				
<	1		DNA	86GAU 01
0.95	0.24	35	DNA	80GLA 04
V (ng/g)				
<	50	L	ICPES	82JON 01
11.2	1.2		RTNA	84BYR 02
11.3			COLOR	85EVA 02

Conc	Uncer	Com	Method	Reference
Zn (ug/g)				
9.1	0.5		RTNA	84BYR 02
9.9	0.5	2	FAA	84MIL 01
10	0.1		ICPES	85WHI 02
10.2			ICPES	81WOL 01
10.3	0.4		XRF	86GIA 01
10.5	0.7	1	ICPES	81WOL 02
10.5	0.7	11	ICPES	82JON 01
10.6	0.4		ICPES	83SCH 04
10.6	0.4	11	ICPES	82JON 01
10.6	0.5	11	ICPES	82JON 01
10.6	0.7	11	ICPES	82JON 01
10.8		1	ICPES	81WOL 02
10.88	0.56		ITNA	78GIL 01
10.9	0.1	6	ICPES	82KUE 01
11	0.2	6	ICPES	82KUE 01
11	0.4		ICPES	80SCH 08
11.1	0.4	6	ICPES	82KUE 01
11.3	1.1		ICPES	81KNA 01
12.6	1.3	2	FAA	84MIL 01
13.8	1.8		CPXRF	84BIS 01
14.8	4.2	12	FAA	85CAR 02

TABLE 1568-1: COMPILED DATA FOR NBS SRM 1568 RICE FLOUR (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS	MEDIAN	RANGE	NAA	ICPES	OTHER METHODS	
		Mean ± SD	Mean ± SD (n)			Mean ± SD (n)	Mean ± SD (n)	Mean ± SD (n) Method	Mean (n) Method
Al	ug/g	---	115 (1)	---	---	---	---	115 (1) SIMS	---
As	ng/g	410 ± 50	414 ± 26 (24)	410	370 - 464	409 ± 31 (9)	420 ± 40 (3)	415 ± 17 (11) AA	420 (1) XRF
B	ug/g	---	< 1	---	---	---	---	< 1 TCGS	---
Bi	ng/g	---	< 8	---	---	---	< 8	---	---
Br	ug/g	1	1.11 ± 0.17 (3)	1.19	0.92 - 1.23	1.08 (2)	---	1.19 (1) XRF	---
Ca	ug/g	140 ± 20	148 ± 8 (14)	146	135 - 162	---	144 ± 15 (5)	135 (1) FAE	158 (1) XRF
Ca	ug/g	---	---	---	---	---	---	147 ± 7 (8) AA	---
Cd	ng/g	29 ± 4	27 ± 4 (7)	28	20 - 30	29.4 (2)	28 (1)	22.5 (2) ASV	27 (1) IDMS
Cd	ng/g	---	---	---	---	---	---	30 (1) AA	---
Cl	ug/g	---	238 ± 13 (4)	238	220 - 248	238 ± 13 (4)	---	---	---
Co	ng/g	20 ± 10	19 ± 2 (3)	18	16.8 - 21	19.5 (2)	---	16.8 (1) AA	---
Cr	ng/g	---	240 ± 180 (3)	200	80 - 430	---	140 (2)	430 (1) FAE	---
Cs	ng/g	---	< 200	---	---	< 200	---	---	---
Cu	ug/g	2.2 ± 0.3	2.08 ± 0.16 (18)	2.1	1.86 - 2.4	2.09 ± 0.16 (4)	2.04 ± 0.12 (6)	2.13 (1) IDMS	2.3 (1) FAE
Cu	ug/g	---	---	---	---	---	---	1.91 (2) HPLC	2.21 (1) XRF
Cu	ug/g	---	---	---	---	---	---	2.2 ± 0.2 (3) AA	---
F	ng/g	---	190 (2)	---	180 - 200	---	---	190 (2) ISE	---
Fe	ug/g	8.7 ± 0.6	8.0 ± 1.2 (14)	7.8	5.6 - 9.7	8.85 (1)	8.2 ± 0.9 (8)	8.05 (2) FAE	9.1 (1) XRF
Fe	ug/g	---	---	---	---	---	---	6.3 (1) AA	---
Ge	ng/g	---	< 20	---	---	---	< 20	---	---
H2O-	%	---	11 (2)	---	---	---	---	12 (1) GRAV	---
Hg	ng/g	6.0 ± 0.7	6.3 ± 0.4 (5)	6.4	5.6 - 6.8	6.5 ± 0.2 (4)	---	5.6 (1) AA	---
I	ng/g	---	11.2 ± 0.4 (5)	11	10.9 - 12	11.2 ± 0.4 (5)	---	---	---
K	ug/g	1120 ± 20	1050 ± 90 (9)	1080	900 - 1150	1125 (1)	1060 ± 100 (4)	900 (1) FAE	1360 (1) XRF
K	ug/g	---	---	---	---	---	---	1060 ± 60 (3) AA	---
Mg	ug/g	---	497 ± 30 (5)	510	450 - 527	---	490 ± 30 (4)	527 (1) SIMS	---
Mn	ug/g	20.1 ± 0.4	20.5 ± 1.0 (16)	20.1	19.1 - 22.4	21 (2)	19.9 ± 0.4 (8)	20.9 ± 1.2 (4) AA	22.1 (1) XRF
Mo	ug/g	1.6	1.61 ± 0.04 (5)	1.6	1.59 - 1.68	1.64 (2)	1.59 ± 0.01 (3)	---	---
N	%	---	1.5 (1)	---	---	---	---	---	---
Na	ug/g	6.0 ± 1.5	7.3 ± 1.8 (4)	6.4	6 - 10	7.8 ± 2.0 (3)	---	6 (1) FAE	---
Ni	ng/g	160	164 ± 12 (4)	160	150 - 180	---	155 (2)	180 (1) XRF	165 (1) AA

TABLE 1568-1: COMPILED DATA FOR NBS SRM 1568 RICE FLOUR (cont.)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	NAA		ICPES		OTHER METHODS					
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method	Mean	(n)	Method
P	ug/g	---	1630 ± 40	(4)	1600	1600 - 1680	---		1630 ± 40	(4)	---			---		
Pb	ng/g	45 ± 10	32	(2)	---	30 - 35	---		---		32.5	(2)	ASV	100	(1)	XRF
Rb	ug/g	7	8.0 ± 0.6	(3)	8.2	7.27 - 8.4	7.27	(1)	---		8.3	(2)	XRF	---		
S	ug/g	---	1350 ± 60	(6)	1360	1256 - 1400	---		1400	(1)	1350 ± 60	(4)	CB	1320	(1)	XRF
Sb	ng/g	---	7.45	(2)	---	5 - 9.9	7.45	(2)	---		---			---		
Sc	ng/g	---	0.19	(2)	---	0.13 - 0.25	0.19	(2)	---		---			---		
Se	ng/g	400 ± 100	380 ± 50	(34)	380	280 - 480	440 ± 20	(8)	360 ± 25	(3)	396 ± 9	(5)	XRF	390	(1)	GC-MS
Se	ng/g	---	---		---	---	---		---		350 ± 40	(15)	AA	---		
Sn	ng/g	---	< 20		---	---	---		< 20		---			---		
Sr	ng/g	---	190	(1)	---	---	---		---		190	(1)	XRF	---		
Te	ng/g	< 2	---		---	---	---		---		---			---		
Tl	ng/g	---	< 2		---	---	---		---		< 2		ASV	< 2		AA
U	ng/g	---	0.89	(1)	---	---	0.89	(1)	---		---			---		
V	ng/g	---	6.2	(1)	---	---	6.2	(1)	---		---			---		
Zn	ug/g	19.4 ± 1.0	19.7 ± 0.6	(16)	19.8	18.7 - 21.3	20	(2)	19.7 ± 0.4	(9)	19.5	(2)	HPLC	21.9	(1)	XRF
Zn	ug/g	---	---		---	---	---		---		19.3	(2)	AA	---		

COMPOUND	CAS #	UNITS	NBS	CONSENSUS Mean	(n)
Total Folates	---	ug/g	---	0.21	(1)
Total Pantothenates	---	ug/g	---	3.8	(1)
Thiamine	---	ug/g	---	1.4	(1)
Protein	---	%	---	8.4	(1)
Nicotinic Acid	59676	ug/g	---	15.7	(1)
Vitamin B-6	65236	ug/g	---	1.4	(1)
Riboflavin	83885	ug/g	---	0.33	(1)

TABLE 1568-2: INDIVIDUAL DATA FOR NBS SRM 1568 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Total Folates (ug/g)				
0.21			VV	85TAN 01
Total Pantothenates (ug/g)				
3.8			VV	85TAN 01
Thiamine (ug/g)				
1.4			VV	85TAN 01
Protein (%)				
8.4			VV	85TAN 01
Nicotinic acid (ug/g)				
15.7			VV	85TAN 01
Vitamin B-6 (ug/g)				
1.4			VV	85TAN 01
Riboflavin (ug/g)				
0.33			VV	85TAN 01
Al (ug/g)				
115			SIMS	83RAM 01
As (ng/g)				
41	2		RTNA	84DEL 01
90	10		COLOR	77BUR 01
320	40	11	HAA	82JON 01
370			ICPES	84MIA 01
380	20	7	RTNA	77GIL 03
387			RTNA	85TIA 01
390	30		HAA	85YAM 01
390	70	7	RTNA	77GIL 03
390	80	7	RTNA	77GIL 03
400	10		RTNA	78GIL 01
400	10		FAA	84XIA 01
400	10	7	RTNA	80GAL 02
400	10	11	HAA	81RAP 01

Conc	Uncer	Com	Method	Reference
As (ng/g) cont.				
410			HAA	84IKE 01
410	20	7	RTNA	80GAL 02
410	20	11	HAA	81RAP 01
410	70	11	HAA	81RAP 01
410	70		HAA	81KNA 01
420	20		HAA	84NAR 01
420	90		XRF	86GIA 01
436	18		HAA	82TAM 01
440			HAA	83KUM 01
440	50	H	ICPES	82HAH 01
440	80		HAA	85NAR 03
452	70		ICPES	81WOL 01
460	70		IENA	82GLA 02
464	11		RTNA	84BYR 02
B (ug/g)				
<	1	L	TCGS	82GLA 02
Bi (ng/g)				
<	8	L	ICPES	82HAH 01
Br (ug/g)				
0.92	0.12		IENA	84GLA 11
1.19	0.17		XRF	86GIA 01
1.23	0.08		ITNA	78GIL 01
Ca (ug/g)				
95	4		CPXRF	84BIS 01
120	30		ICPES	85WHI 02
135	4		FAE	83MAR 04
136	5	12	FAA	85CAR 02
142	3		ICPES	81WOL 01
144		38	AA	81YAS 01
145		38	AA	81YAS 01
146		38	AA	81YAS 01
146		38	AA	81YAS 01
148	3	11	ICPES	82JON 01
148	5	11	ICPES	82JON 01
149		38	AA	81YAS 01
151		38	AA	81YAS 01
158	14		XRF	86GIA 01
160	10		ICPES	85LYO 01
162	10	12	FAA	85CAR 02

TABLE 1568-2: INDIVIDUAL DATA FOR NBS SRM 1568 (cont.)

Conc	Uncer	Com	Method	Reference
Cd (ng/g)				
20			ASV	82GAJ 01
25	2		ASV	82SAT 02
27	2		IDMS	84BRO 03
28	2		ICPES	83SCH 04
29	9	7	RTNA	80GAL 02
29.8	1.4		RTNA	84BYR 02
30	10		FAA	80SCH 08
40	20	11	ICPES	82JON 01
60	30	11	ICPES	82JON 01
Cl (ug/g)				
220			ITNA	86GAU 01
238			ITNA	84GLA 11
246	11		IENA	84GLA 11
248			ITNA	85GAU 04
Co (ng/g)				
16.8	3.8		FAA	84BOR 01
18	2		ITNA	78GIL 01
21	10		RTNA	84BYR 02
Cr (ng/g)				
<	400	L	XRF	86GIA 01
80	80	11	ICPES	82JON 01
200	200	11	ICPES	82JON 01
430	70		FAE	83MAR 04
Cs (ng/g)				
<	200	L	ITNA	82GLA 02
Cu (ug/g)				
1.76	0.1		CPXRF	84BIS 01
1.86	0.03		RTNA	84BYR 02
1.87	0.11	11	HPLC	85ICH 01
1.9	0.2	12	FAA	85CAR 02
1.9	0.2	11	ICPES	82JON 01
1.9	0.2	11	ICPES	82JON 01
1.95	0.09	11	HPLC	85ICH 01
2.01	0.01		ICPES	81WOL 01
2.1			RTNA	85TIA 01
2.1	0.1		ICPES	81KNA 01
2.1	0.2		ICPES	80SCH 08
2.13	0.06		IDMS	84BRO 03
2.2	0.13	7	RTNA	80GAL 02
2.2	0.13		RTNA	78GIL 01
Cu (ug/g) cont.				
2.2	0.2	2	FAA	84MIL 01
2.2	0.3		ICPES	83SCH 04
2.21	0.22		XRF	86GIA 01
2.3	0.2		FAE	83MAR 04
2.4	0.1	2	FAA	84MIL 01
2.8	0.3	12	FAA	85CAR 02
F (ng/g)				
180	40		ISE	83KNA 01
200			ISE	84GLA 02
Fe (ug/g)				
5.6	0.9	2	FAA	84MIL 01
6.4	0.6	12	FAE	83MAR 04
7	0.3	2	FAA	84MIL 01
7.1	0.4	11	ICPES	82JON 01
7.3	0.4	11	ICPES	82JON 01
7.6	0.4	11	ICPES	82JON 01
7.8	0.4	11	ICPES	82JON 01
8	1		ICPES	80SCH 08
8.85	0.94		ITNA	78GIL 01
9.06	1		ICPES	81WOL 01
9.1	0.9		ICPES	85LYO 01
9.1	1.2		XRF	86GIA 01
9.4	0.3		ICPES	81KNA 01
9.7	2.7	12	FAE	83MAR 04
11.2	0.7		CPXRF	84BIS 01
Ge (ng/g)				
<	20	L	ICPES	82HAH 01
H2O (%)				
9.9			VV	85TAN 01
H2O- (%)				
12		D	GRAV	85NAR 03
12			GRAV	84NAR 01
Hg (ng/g)				
<	80	L	XRF	86GIA 01
5.6	0.5		CVAA	81KNA 01
6.4	0.5		RTNA	84DEL 01
6.4	1		RTNA	78GIL 01
6.4	1	7	RTNA	80GAL 02
6.8	1.05		RTNA	84BYR 02

TABLE 1568-2: INDIVIDUAL DATA FOR NBS SRM 1568 (cont.)

Conc	Uncer	Com	Method	Reference
I (ng/g)				
10.9	1.2		RTNA	84BYR 02
11	1		RTNA	83ALL 01
11	6		IENA	84GLA 11
11.1	1	35	RTNA	81ALL 01
12	1	34	RTNA	81ALL 01
K (ug/g)				
900	100		FAE	83MAR 04
965	11		ICPES	81WOL 01
970	160		ICPES	85WHI 02
995	48	12	FAA	85CAR 02
1080	20	2	FAA	84MIL 01
1100	30	2	FAA	84MIL 01
1125	16		ITNA	78GIL 01
1140	30	11	ICPES	82JON 01
1150	80	11	ICPES	82JON 01
1239	28		CPXRF	84BIS 01
1360	160		XRF	86GIA 01
Mg (ug/g)				
450	20		ICPES	85WHI 02
490	30		ICPES	85LYO 01
510	10	11	ICPES	82JON 01
510	20	11	ICPES	82JON 01
527	6		SIMS	83RAM 01
Mn (ug/g)				
19.1	0.9	11	ICPES	82JON 01
19.5	1	2	FAA	84MIL 01
19.7	0.4		ICPES	83SCH 04
19.8	1.5		ICPES	85LYO 01
19.9	0.4		ICPES	81WOL 01
19.95	0.69		ITNA	78GIL 01
20	3		ICPES	80SCH 08
20.1	0.3	11	ICPES	82JON 01
20.2	0.5	11	ICPES	82JON 01
20.7	1.4		ICPES	85WHI 02
20.8	0.4	12	FAA	85CAR 02
21	0.4	12	FAA	85CAR 02
21.4	1.4		ICPES	81KNA 01
22.1	0.7		RTNA	84BYR 02
22.1	2.8		XRF	86GIA 01
22.4	0.9	2	FAA	84MIL 01
25.8	1.1		CPXRF	84BIS 01

Conc	Uncer	Com	Method	Reference
Mo (ug/g)				
1.59	0.07	11	ICPES	82JON 01
1.59	0.09	11	ICPES	82JON 01
1.6	0.13		ICPES	81WOL 01
1.61			RTNA	85TIA 01
1.68	0.18		RTNA	84MOK 02
N (%)				
1.5			VV	85TAN 01
Na (ug/g)				
<	20		ICPES	85WHI 02
6	1.6		FAE	83MAR 04
6.4			ITNA	84GLA 11
6.9	0.4		ITNA	78GIL 01
10			ITNA	85GAU 04
Ni (ng/g)				
150	20	11	ICPES	82JON 01
160	30	11	ICPES	82JON 01
165			FAA	85LON 01
180	60		XRF	86GIA 01
2000	100		CPXRF	84BIS 01
P (ug/g)				
1420	2		ICPES	84PRI 01
1600	60	11	ICPES	82JON 01
1600	100		ICPES	85LYO 01
1630	30	11	ICPES	82JON 01
1680	40		ICPES	85WHI 02
Pb (ng/g)				
<	100	L	ICPES	82JON 01
<	100	L	ICPES	82JON 01
30			ASV	82GAJ 01
35	4		ASV	82SAT 02
100	90		XRF	86GIA 01
Rb (ug/g)				
7.27	0.21		ITNA	78GIL 01
8.2	0.8		CPXRF	84BIS 01
8.4	0.9		XRF	86GIA 01

TABLE 1568-2: INDIVIDUAL DATA FOR NBS SRM 1568 (cont.)

Conc	Uncer	Com	Method	Reference
S (ug/g)				
1059	5		ICPES	84PRI 01
1256	58		CB	86GAU 01
1320	30		WXRF	86BOW 01
1360	50		CB	86BOW 01
1380		D	CB	85JAC 01
1380	60	6	CB	84JAC 01
1400			ICPES	85WHI 02
1400		D	CB	85JAC 01
1400	30	6	CB	84JAC 01
1520	70		CB	84GLA 11
Sb (ng/g)				
<	2	L	ICPES	82HAH 01
5	1		RTNA	78GIL 01
9.9	0.3		RTNA	84BYR 02
Sc (ng/g)				
0.13	0.17		ITNA	86GAU 01
0.25			ITNA	84GLA 11
Se (ng/g)				
280	30	11	HAA	82JON 01
280	55		FAA	81MEY 01
300		11	HAA	85PIW 01
315	14		HAA	81HAH 01
320	40	11	HAA	82JON 01
320	50		HAA	81MEY 01
331	29		ICPES	81WOL 01
338	3	7	RTNA	77GIL 03
350		11	HAA	85PIW 01
370	30		HAA	80RAP 02
370	60	H	ICPES	82HAH 01
380			ICPES	84MIA 01
380	10		HAA	81HAN 01
380	20		HAA	83KOL 01
380	40		HAA	84NAR 01
380	40		XRF	86GIA 01
380	40		HAA	85YAM 01
380	50		HAA	80VIJ 01
390	20		GC-MS	81REA 02
390	70		HAA	81REA 01
400	8		EXRF	80RAP 03
400	20	11	XRF	80RAP 01
400	20		XRF	81KNA 01
400	100		HAA	85NAR 03
400	100	11	XRF	80RAP 01
420	30		ITNA	80GAL 02

Conc	Uncer	Com	Method	Reference
Se (ng/g) cont.				
420	30		ITNA	78GIL 01
420	30	7	RTNA	77GIL 03
430	40		RTNA	84DEL 01
450	30		RTNA	78GIL 01
460	80	7	RTNA	77GIL 03
460	80	7	RTNA	80GAL 02
480	70	7	RTNA	80GAL 02
480	70		HAA	82TAM 01
Sn (ng/g)				
<	20	L	ICPES	82HAH 01
Sr (ng/g)				
190	40		XRF	86GIA 01
Tl (ng/g)				
<	2	11	ASV	84LIE 01
<	2	11	ASV	84LIE 01
<	2	11	ASV	84LIE 01
<	2	11	FAA	84LIE 01
U (ng/g)				
<	1		DNA	86GAU 01
0.89	0.22	35	DNA	80GLA 04
V (ng/g)				
<	50	L	ICPES	82JON 01
6.2	0.8		RTNA	84BYR 02
Zn (ug/g)				
17.3	7.2	12	FAA	85CAR 02
18.7	4.6	2	FAA	84MIL 01
19.1	0.4		RTNA	84BYR 02
19.1	2.4		ICPES	85LYO 01
19.3	0.7	11	ICPES	82JON 01
19.4	0.4		ICPES	81WOL 01
19.5	0.5	11	HPLC	85ICH 01
19.5	0.6	11	HPLC	85ICH 01
19.6	0.4		ICPES	80SCH 08
19.8	0.8	11	ICPES	82JON 01
19.9	0.4		ICPES	83SCH 04
19.9	1.4	2	FAA	84MIL 01
19.97	0.69		ITNA	78GIL 01
20	1	11	ICPES	82JON 01

TABLE 1568-2: INDIVIDUAL DATA FOR NBS SRM 1568 (cont.)

Conc	Uncer	Com	Method	Reference
Zn (ug/g) cont.				
20.2	0.8	11	ICPES	82JON 01
20.4	0.9		ICPES	85WHI 02
21.3	1.3		ICPES	81KNA 01
21.9	1.8		XRF	86GIA 01
26.3	3.1		CPXRF	84BIS 01

TABLE 1569-1: COMPILED DATA FOR NBS SRM 1569 BREWER'S YEAST (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	NAA		ICPES		OTHER METHODS		
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method
Al	ug/g	---	2150	(2)	---	2000 - 2300	2300	(1)	2000	(1)	---		
As	ng/g	---	590 ± 70	(3)	560	530 - 670	670	(1)	---		545	(2)	AA
B	ug/g	---	6.2	(1)	---	---	---		---		6.2	(1)	TCGS
Be	ng/g	---	22	(1)	---	---	---		---		22	(1)	FAAC
Br	ug/g	---	3.6 ± 3.0	(3)	3.4	0.65 - 6.7	3.6 ± 3.0	(3)	---		---		
Ca	ug/g	---	2370 ± 100	(4)	2290	2270 - 2490	---		2370 ± 100	(4)	---		
Cd	ng/g	---	170 ± 90	(4)	120	80 - 290	---		170 ± 90	(4)	---		
Ce	ug/g	---	2.3	(1)	---	---	2.3	(1)	---		---		
Cl	ug/g	---	485	(2)	---	460 - 510	485	(2)	---		---		
Co	ng/g	---	280	(2)	---	260 - 300	280	(2)	---		---		
Cr	ug/g	2.12 ± 0.05	2.00 ± 0.26	(16)	2.08	1.2 - 2.17	2.05 ± 0.17	(11)	1.2	(1)	1.7 ± 0.6	(3)	AA
Cr	ug/g	---	---		---	---	---		---		2.08	(1)	IDMS
Cr	ug/g	---	---		---	---	---		---		2	(1)	NM
Cs	ng/g	---	< 200		---	---	< 200		---		---		
Cu	ug/g	---	16 ± 3	(5)	17.7	11 - 18.4	11	(1)	16.8 ± 2.5	(4)	---		
Eu	ng/g	---	20	(1)	---	---	20	(1)	---		---		
F	ug/g	---	14.5	(2)	---	14 - 15	---		---		14.5	(2)	ISE
Fe	ug/g	---	660 ± 50	(4)	660	590 - 707	648	(2)	676	(2)	---		
Ga	ug/g	---	7.1	(1)	---	---	7.1	(1)	---		---		
Hf	ng/g	---	130	(1)	---	---	130	(1)	---		---		
Hg	ng/g	---	22	(1)	---	---	---		---		22	(1)	AA
I	ng/g	---	46	(2)	---	32 - 60	46	(2)	---		---		
K	%	---	1.52 ± 0.11	(6)	1.45	1.4 - 1.71	1.63	(2)	1.47 ± 0.08	(4)	---		

TABLE 1569-1: COMPILED DATA FOR NBS SRM 1569 BREWER'S YEAST (cont.)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	NAA Mean ± SD (n)	ICPES Mean ± SD (n)	OTHER METHODS Mean ± SD (n) Method
Li	ng/g	---	440 (1)	---	---	---	---	440 (1) AAC
Mg	ug/g	---	1850 ± 100 (5)	1870	1730 - 1980	1780 (1)	1870 ± 100 (4)	---
Mn	ug/g	---	10.0 ± 0.7 (5)	10	9.1 - 10.9	10 (1)	10.0 ± 0.8 (4)	---
Mo	ug/g	---	3.6 ± 0.3 (4)	3.4	3.3 - 3.9	---	3.6 ± 0.3 (4)	---
Na	ug/g	---	610 ± 90 (3)	660	510 - 670	610 ± 90 (3)	---	---
Ni	ug/g	---	5.3 ± 0.7 (4)	4.8	4.6 - 6	---	5.3 ± 0.7 (4)	---
P	%	---	1.04 ± 0.03 (4)	1.02	1.0 - 1.08	---	1.04 ± 0.03 (4)	---
Pb	ng/g	---	350 (2)	---	200 - 500	---	350 (2)	---
Rb	ug/g	---	16 (1)	---	---	16 (1)	---	---
S	ug/g	---	4140 ± 40 (3)	4140	4100 - 4170	---	---	4140 (1) XRF
S	ug/g	---	---	---	---	---	---	4135 (2) CB
Sb	ng/g	---	152 (2)	---	75 - 230	152 (2)	---	---
Sc	ng/g	---	187 ± 21 (5)	180	170 - 220	187 ± 21 (5)	---	---
Se	ug/g	---	0.97 ± 0.04 (3)	0.98	0.92 - 1.01	0.92 (1)	---	1 (2) AA
Sr	ug/g	---	10.3 (1)	---	---	10.3 (1)	---	---
Th	ug/g	---	3.7 (1)	---	---	3.7 (1)	---	---
Ti	ug/g	---	38 (1)	---	---	38 (1)	---	---
U	ng/g	---	470 ± 16 (8)	470	441 - 490	474 ± 11 (7)	---	441 (1) IDMS
U-235/238	ratio	---	0.0073 (1)	---	---	---	---	0.0073 (1) IDMS
V	ug/g	---	4.25 (2)	---	4.1 - 4.4	4.1 (1)	4.4 (1)	---
Zn	ug/g	---	65 ± 3 (9)	65	59 - 70	70 (1)	64.5 ± 3.1 (8)	---

TABLE 1569-2: INDIVIDUAL DATA FOR NBS SRM 1569 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (ug/g)				
2000	56	11	ICPES	82JON 01
2300	10		ITNA	78BER 01
As (ng/g)				
530	80	11	HAA	82JON 01
560	30	11	HAA	82JON 01
670	70		IENA	82GLA 02
B (ug/g)				
6.2			TCGS	82GLA 02
Be (ng/g)				
22	6		FAAC	86GAU 01
Br (ug/g)				
0.65	0.03		ITNA	78BER 01
3.4			IENA	84GLA 11
6.7	0.4		ITNA	79KOB 03
Ca (ug/g)				
2270	70	11	ICPES	82JON 01
2290	10	11	ICPES	82JON 01
2420	40	11	ICPES	82JON 01
2490	30	11	ICPES	82JON 01
Cd (ng/g)				
80	40	11	ICPES	82JON 01
120	70	11	ICPES	82JON 01
180	70	11	ICPES	82JON 01
290	60	11	ICPES	82JON 01
Ce (ug/g)				
2.3	0.1		ITNA	78BER 01
Cl (ug/g)				
460	30		ITNA	78BER 01
510			ITNA	84GLA 11
900			IENA	84GLA 11
Co (ng/g)				
260	20		ITNA	78BER 01
300	60		ITNA	79KOB 03
Cr (ug/g)				
0.078	0.026		FAA	74WOL 01
0.7	0.1	11	ICPES	82JON 01
0.87			FAA	80CHA 01
1.04	0.04	7	FAA	80CHA 01
1.12	0.08		RTNA	78GOE 01
1.2	0.6	11	ICPES	82JON 01
1.558	0.015	11	RTNA	78MCC 01
2.00	0.02		NM	80SHI 01
2.02	0.1		FAA	83CAR 02
2.043		11	NAA	79VER 01
2.074	0.012	11	RTNA	78MCC 01
2.08	0.09		IDMS	79VEI 01
2.082	0.013	24	ITNA	78MCC 01
2.094		11	NAA	79VER 01
2.096	0.02	24	ITNA	78MCC 01
2.1	0.5		ITNA	79KOB 03
2.119	0.025	24	ITNA	78MCC 01
2.12	0.08		ITNA	78BER 01
2.13	0.12	7	FAA	80CHA 01
2.13	0.13		RTNA	79TJI 01
2.17	0.11		ITNA	82GLA 02
Cs (ng/g)				
<	200	L	ITNA	82GLA 02
Cu (ug/g)				
11	2		ITNA	78BER 01
13	1	11	ICPES	82JON 01
17.7	0.2	11	ICPES	82JON 01
18.1	0.7	11	ICPES	82JON 01
18.4	0.3	11	ICPES	82JON 01
Eu (ng/g)				
20	10		ITNA	79KOB 03
F (ug/g)				
14	2		ISE	83KNA 01
15	2		ISE	84GLA 02
Fe (ug/g)				
257	34	11	ICPES	82JON 01
499	15	11	ICPES	82JON 01
590	24		ITNA	79KOB 03
660	15	11	ICPES	82JON 01
693	25	11	ICPES	82JON 01
707	16		ITNA	78BER 01

TABLE 1569-2: INDIVIDUAL DATA FOR NBS SRM 1569 (cont.)

Conc	Uncer	Com	Method	Reference
Ga (ug/g)				
7.1	0.5		ITNA	78BER 01
Hf (ng/g)				
130	10		ITNA	78BER 01
Hg (ng/g)				
22			CVAA	82GLA 02
I (ng/g)				
32			IENA	84GLA 11
60	20		IENA	82SAT 01
K (%)				
1.4	0.1	11	ICPES	82JON 01
1.45	0.007	11	ICPES	82JON 01
1.45	0.05	11	ICPES	82JON 01
1.55	0.05		ITNA	78BER 01
1.59	0.04	11	ICPES	82JON 01
1.71	0.12		ITNA	79KOB 03
Li (ng/g)				
440	20		AAC	85GAU 04
Mg (ug/g)				
1730	70	11	ICPES	82JON 01
1780	100		ITNA	78BER 01
1870	50	11	ICPES	82JON 01
1900	60	11	ICPES	82JON 01
1980	60	11	ICPES	82JON 01
Mn (ug/g)				
7	0.8		ITNA	78BER 01
9.1	0.6	11	ICPES	82JON 01
9.6	0.6	11	ICPES	82JON 01
10	1.5		ITNA	79KOB 03
10.4	0.8	11	ICPES	82JON 01
10.9	0.7	11	ICPES	82JON 01
Mo (ug/g)				
3.3	0.3	11	ICPES	82JON 01
3.4	0.1	11	ICPES	82JON 01
3.8	0.2	11	ICPES	82JON 01
3.9	0.2	11	ICPES	82JON 01
Na (ug/g)				
510	30		ITNA	78BER 01
660			ITNA	84GLA 11
670	42		ITNA	79KOB 03
Ni (ug/g)				
4.6	0.3	11	ICPES	82JON 01
4.8	0.1	11	ICPES	82JON 01
5.9	0.2	11	ICPES	82JON 01
6	0.2	11	ICPES	82JON 01
P (%)				
1	0.04	11	ICPES	82JON 01
1.02	0.03	11	ICPES	82JON 01
1.04	0.05	11	ICPES	82JON 01
1.08	0.04	11	ICPES	82JON 01
Pb (ng/g)				
200	200	11	ICPES	82JON 01
500	500	11	ICPES	82JON 01
Rb (ug/g)				
16	1		ITNA	78BER 01
S (ug/g)				
4100	90		CB	86BOW 01
4140	120		WXRF	86BOW 01
4170	120		CB	84GLA 11
Sb (ng/g)				
75	5		ITNA	78BER 01
230	50		ITNA	79KOB 03
Sc (ng/g)				
170	9		ITNA	86GAU 01
170	14		ITNA	84GLA 11
180	10		ITNA	78BER 01
196			ITNA	85GAU 04
220	30		ITNA	79KOB 03
Se (ug/g)				
0.92	0.09		ITNA	78BER 01
0.98	0.05	11	HAA	82JON 01
1.01	0.06	11	HAA	82JON 01

TABLE 1569-2: INDIVIDUAL DATA FOR NBS SRM 1569 (cont.)

Conc	Uncer	Com	Method	Reference
Sr (ug/g)				
10.3			IENA	85GAU 04
Th (ug/g)				
3.7	0.2		ITNA	78BER 01
Ti (ug/g)				
38	2		ITNA	78BER 01
U (ng/g)				
441	4		IDMS	82CUR 01
460	20	35	DNA	81GLA 03
470	20		DNA	84GLA 02
470	20		DNA	82GLA 02
470	20	35	DNA	80GLA 04
470	50	35	DNA	81GLA 04
490	20		ITNA	78BER 01
490	30		DNA	84GLA 11
U-235/238 (ratio)				
7.26	0.07	28	IDMS	82CUR 01
V (ug/g)				
1.46	0.05	11	ICPES	82JON 01
4.1	0.1		ITNA	78BER 01
4.4	0.1	11	ICPES	82JON 01
Zn (ug/g)				
30	4.3		ITNA	79KOB 03
59	6	11	ICPES	82JON 01
63	2	11	ICPES	82JON 01
64	4	11	ICPES	82JON 01
64	5	11	ICPES	82JON 01
65	2	11	ICPES	82JON 01
65	2	11	ICPES	82JON 01
66	2	11	ICPES	82JON 01
70	2		ITNA	78BER 01
70	4	11	ICPES	82JON 01

TABLE 1570-1: COMPILED DATA FOR NBS SRM 1570 SPINACH (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		OTHER METHODS					
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method	Mean	(n)	Method
Ag	ng/g	---	65	(2)	---	65 - 65	65	(1)	65	(1)	---		---			---		
Al	ug/g	870 ± 50	810 ± 90	(13)	824	609 - 909	861	(1)	856 ± 36	(6)	700 ± 150	(8)	---			---		
As	ng/g	150 ± 50	153 ± 20	(18)	150	114 - 180	158 ± 13	(8)	147 ± 23	(7)	170	(1)	---			170	(1)	COLOR
Au	ng/g	---	1.2	(2)	---	0.4 - 2	---		1.2	(2)	---		---			---		
B	ug/g	30	27.7 ± 0.6	(5)	27.6	27 - 28.5	---		---		27.6 ± 0.7	(4)	---			28	(1)	TCGS
Ba	ug/g	---	14.9 ± 2.5	(3)	13.9	13.1 - 17.8	---		13.1	(1)	15.8	(2)	---			---		
Be	ng/g	---	16	(1)	---	---	---		---		16	(1)	---			---		
Bi	ng/g	---	< 8		---	---	---		---		< 8		---			---		
Br	ug/g	54	48 ± 4	(14)	47	42.4 - 55.3	---		48 ± 4	(13)	---		51.1	(1)	XRF	---		
C	%	---	40.76	(2)	---	40.7 - 40.82	---		---		---		---			40.76	(2)	CB
Ca	%	1.35 ± 0.03	1.33 ± 0.08	(21)	1.347	1.19 - 1.49	1.21	(1)	1.44 ± 0.06	(3)	1.32 ± 0.06	(14)	1.30	(2)	XRF	1.35	(1)	NM
Cd	ug/g	1.5	1.43 ± 0.14	(30)	1.42	1.2 - 1.7	1.41 ± 0.16	(10)	1.51 ± 0.12	(5)	1.5 ± 0.2	(12)	1.25 ± 0.06	(3)	ASV	1.67	(1)	SSMS
Ce	ng/g	---	456	(2)	---	240 - 671	---		456	(2)	---		---			---		
Cl	ug/g	---	6600 ± 410	(6)	6500	6000 - 7000	---		6620 ± 450	(5)	---		6500	(1)	XRF	---		
Co	ug/g	1.5	1.56 ± 0.12	(12)	1.5	1.41 - 1.76	1.51 ± 0.12	(3)	1.58 ± 0.12	(8)	1.5	(1)	---			---		
Cr	ug/g	4.6 ± 0.3	4.3 ± 0.5	(25)	4.4	3.33 - 5.2	4.6 ± 0.6	(7)	4.6 ± 0.4	(7)	3.9 ± 0.5	(9)	5.2	(1)	AE±AF	4.7	(1)	DCPES
Cr	ug/g	---	---		---	---	---		---		---		3.9	(1)	POL	6.0	(1)	PAA
Cs	ng/g	---	61 ± 9	(4)	63	48 - 68	---		61 ± 9	(4)	---		---			---		
Cu	ug/g	12 ± 2	11.8 ± 0.7	(45)	11.8	10.2 - 13.2	12.2 ± 0.6	(10)	11.6 ± 0.4	(8)	11.6 ± 0.8	(17)	11.6	(2)	XRF	12.00	(1)	IDMS
Cu	ug/g	---	---		---	---	---		---		---		10.8	(1)	ASV	---		
Cu	ug/g	---	---		---	---	---		---		---		12.1	(2)	COLOR	13	(1)	DCPES
Cu	ug/g	---	---		---	---	---		---		---		11.5	(1)	FAE	11.5	(1)	SSMS
Eu	ng/g	20	15 ± 4	(3)	14	11 - 20	---		15 ± 4	(3)	---		---			---		
F	ug/g	---	4.35	(2)	---	4.3 - 4.4	---		---		---		---			4.35	(2)	ISE
Fe	ug/g	550 ± 20	540 ± 30	(36)	541	478 - 601	543 ± 27	(9)	555 ± 30	(6)	524 ± 30	(15)	543 ± 48	(3)	XRF	539	(2)	COLOR
Fe	ug/g	---	---		---	---	---		---		---		548	(1)	NM	---		
Gd	ng/g	---	60	(1)	---	---	---		60	(1)	---		---			---		
Ge	ng/g	---	< 20		---	---	---		---		< 20		---			---		
H	%	---	5.57	(2)	---	5.54 - 5.6	---		---		---		5.54	(1)	CB	5.6	(1)	TCGS
H2O-	%	---	6	(1)	---	---	---		---		---		---			---		
Hf	ng/g	---	40	(1)	---	---	---		40	(1)	---		---			---		
Hg	ng/g	30 ± 5	30 ± 4	(6)	29	25 - 34	29 ± 3	(4)	30	(2)	---		---			---		
I	ug/g	---	1.20 ± 0.12	(6)	1.1	1.08 - 1.325	---		1.25 ± 0.12	(4)	---		1.08	(1)	MS	1.1	(1)	PAA
In	ng/g	---	1.25	(2)	---	1.2 - 1.3	---		1.25	(2)	---		---			---		
K	%	3.56 ± 0.03	3.56 ± 0.15	(25)	3.59	3.26 - 3.9	3.51 ± 0.15	(4)	3.55 ± 0.16	(8)	3.59 ± 0.08	(11)	4.03	(2)	XRF	---		
La	ng/g	370	340 ± 40	(7)	350	260 - 400	---		340 ± 50	(5)	---		---			332	(2)	NM
Li	ug/g	---	1.98	(2)	---	1.93 - 2.04	2.04	(1)	---		1.93	(1)	---			---		

TABLE 1570-1: COMPILED DATA FOR NBS SRM 1570 SPINACH (cont.)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		OTHER METHODS					
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method	Mean	(n)	Method
Lu	ng/g	---	3	(1)	---	---	---		3	(1)	---		---			---		
Mg	ug/g	---	8650 ± 310	(19)	8600	7800 - 9200	8770 ± 400	(3)	8150	(2)	8660 ± 200	(14)	---			---		
Mn	ug/g	165 ± 6	164 ± 6	(39)	165	155 - 178	162 ± 6	(10)	163 ± 5	(7)	165 ± 6	(18)	170 ± 12	(3)	XRF	146	(1)	AE±AF
Mn	ug/g	---	---		---	---	---		---		---		188	(1)	PAA	178	(1)	DCPES
Mo	ng/g	---	300 ± 80	(7)	300	200 - 420	---		360	(2)	275 ± 95	(4)	---			300	(1)	COLOR
N	%	5.9	5.6 ± 0.3	(3)	5.62	5.31 - 6	---		---		---		5.62	(1)	CB	6.00	(1)	TCGS
Na	%	---	1.42 ± 0.10	(17)	1.43	1.24 - 1.56	1.560	(2)	1.41 ± 0.10	(8)	1.38 ± 0.10	(7)	---			---		
Nd	ng/g	---	306	(1)	---	---	---		306	(1)	---		---			---		
Ni	ug/g	6	5.6 ± 0.7	(24)	5.51	4.1 - 7.5	6.5 ± 1.4	(3)	6.2 ± 1.4	(4)	5.5 ± 0.6	(13)	5.3	(2)	XRF	6.4	(1)	POL
Ni	ug/g	---	---		---	---	---		---		---		6.1	(1)	PAA	5.12	(1)	VOLT
P	ug/g	5500 ± 200	5240 ± 310	(24)	5300	4530 - 5700	5420 ± 220	(4)	---		5160 ± 310	(17)	5065	(2)	COLOR	5100	(1)	CPAA
P	ug/g	---	---		---	---	---		---		---		---			5600	(1)	NM
Pb	ug/g	1.2 ± 0.2	1.19 ± 0.25	(27)	1.16	0.8 - 2	1.19 ± 0.12	(17)	---		1.5 ± 0.7	(6)	1.10 ± 0.10	(4)	ASV	1.12	(1)	SSMS
Pb	ug/g	---	---		---	---	---		---		---		2.0	(1)	PAA	---		
Pd	ng/g	---	< 2		---	---	---		< 2		---		---			---		
Pr	ng/g	---	< 60		---	---	---		< 60		---		---			---		
Rb	ug/g	12.1 ± 0.2	11.5 ± 0.9	(6)	11.32	10 - 12.7	12.45	(2)	11.0 ± 0.7	(4)	---		---			---		
S	ug/g	---	4350 ± 470	(7)	4440	3600 - 4860	---		---		4317	(2)	4320 ± 530	(4)	CB	4500	(1)	XRF
Sb	ng/g	40	40 ± 9	(7)	40	27 - 50	---		40 ± 9	(7)	---		---			---		
Sc	ng/g	160	166 ± 11	(9)	170	150 - 180	---		166 ± 11	(9)	---		---			---		
Se	ng/g	---	40 ± 14	(9)	37	24 - 66	33.95	(2)	48 ± 19	(4)	---		37	(1)	FLUOR	33	(2)	GC
Si	ug/g	---	2900	(1)	---	---	---		---		2900	(1)	---			---		
Sm	ng/g	---	56 ± 24	(3)	54	33 - 80	---		56 ± 24	(3)	---		---			---		
Sn	ug/g	---	3.1	(1)	---	---	---		---		3.1	(1)	---			---		
Sr	ug/g	87 ± 2	80 ± 5	(7)	82.5	72.5 - 87	85.35	(2)	83.4	(1)	77	(2)	72.5	(1)	XRF	82.5	(1)	AE±AF
Ta	ug/g	---	0.23	(1)	---	---	---		0.23	(1)	---		---			---		
Tb	ng/g	---	8	(1)	---	---	---		8	(1)	---		---			---		
Th	ng/g	120 ± 30	130	(2)	---	110 - 150	---		130	(2)	---		---			---		
Ti	ug/g	---	18 ± 10	(3)	16.5	8.9 - 28	---		---		18 ± 10	(3)	---			---		
Tl	ng/g	30	31	(1)	---	---	---		---		---		---			31	(1)	SSMS
U	ng/g	46 ± 9	46 ± 3	(4)	45	42 - 48	---		46 ± 3	(4)	---		---			---		
V	ug/g	---	1.20 ± 0.16	(12)	1.2	0.928 - 1.5	---		1.11 ± 0.10	(7)	1.37 ± 0.11	(3)	1.44	(1)	COLOR	1.08	(1)	DCPES
W	ng/g	---	140	(1)	---	---	---		140	(1)	---		---			---		
Yb	ng/g	---	12.5	(2)	---	2 - 23	---		12.5	(2)	---		---			---		
Zn	ug/g	50 ± 2	50 ± 4	(43)	50	42 - 60.1	52 ± 4	(8)	49 ± 5	(7)	49.3 ± 2.5	(22)	60 ± 7	(3)	XRF	52	(1)	DCPES
Zn	ug/g	---	---		---	---	---		---		---		49.2	(1)	PAA	49.5	(1)	SSMS

TABLE 1570-1: COMPILED DATA FOR NBS SRM 1570 SPINACH (cont.)

COMPOUND	CAS #	UNITS	NBS	CONSENSUS Mean (n)
Total Folates	---	ug/g	---	5.3 (1)
Total Pantothenates	---	ug/g	---	14.3 (1)
Thiamine	---	ug/g	---	5.6 (1)
Protein	---	%	---	33.2 (1)
Nicotinic Acid	59676	ug/g	---	42.4 (1)
Vitamin B-6	65236	ug/g	---	12.1 (1)
Riboflavin	83885	ug/g	---	17.6 (1)

TABLE 1570-2: INDIVIDUAL DATA FOR NBS SRM 1570 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Total Folates (ug/g)				
5.3			VV	85TAN 01
Total Pantothenates (ug/g)				
14.3			VV	85TAN 01
Thiamine (ug/g)				
5.6			VV	85TAN 01
Protein (%)				
33.2			VV	85TAN 01
Nicotinic acid (ug/g)				
42.4			VV	85TAN 01
Vitamin B-6 (ug/g)				
12.1			VV	85TAN 01
Riboflavin (ug/g)				
17.6			VV	85TAN 01
Ag (ng/g)				
65	10		RTNA	80SLO 01
65	40		AA	80JAC 01
Al (ug/g)				
366	48	11	ICPES	81MUN 01
402.6	23.2	6	COLOR	85BAR 01
412.7	24.8	6	COLOR	85BAR 01
482			ICPES	78CAP 01
536			ICPES	81GOO 01
609	16	11	ICPES	81MUN 01
620	36		ICPES	83SCH 03
782	31	11	ICPES	82JON 01
819	30		ICPES	84ABD 01
820	25		ITNA	84GLA 02
824	10		ITNA	80SLO 01
829	23		ITNA	77NAD 02
854	25		ICPES	83SCH 04
861	30		AA	83RAP 01
865	47		ICPES	84NAD 01
870			ITNA	84GLA 11
881			ITNA	78CAP 01
909	11		IENA	85GLA 02
1190		35	ITNA	81GLA 03

Conc	Uncer	Com	Method	Reference
As (ng/g)				
62	13	7	FAA	82HOE 02
114			HAA	77IHN 01
120	10	7	RTNA	80GAL 02
120	70		ITNA	85NDI 01
140	10		AA	83RAP 01
146			RTNA	85TIA 01
147	1		RTNA	79HOE 01
149	25		RTNA	85GAU 04
150	10	11	HAA	82JON 01
150	13	7	FAA	82HOE 02
152	5	7	FAA	82HOE 02
160			FAA	78CAP 01
160	10	11	HAA	82JON 01
170	10	H	ICPES	82HAH 01
170	10		COLOR	77BUR 01
170	20		FAA	80DUP 01
170	40		RTNA	80SLO 01
180	20		HAA	80TAM 01
180	70		IENA	82GLA 02
Au (ng/g)				
0.4			RTNA	80SLO 01
2	0.0004		ITNA	79REN 03
B (ug/g)				
20.9	0.3		ICPES	79HER 01
27	3.5		ICPES	84PRI 01
27.2	0.8	11	ICPES	81MUN 01
27.6	1.3	11	ICPES	81MUN 01
28	0.4		TCGS	82GLA 02
28.5			ICPES	81GOO 01
Ba (ug/g)				
< 45		L	ITNA	78CAP 01
13.1	1.8		ITNA	77NAD 02
13.9	0.7		ICPES	85WHI 02
17.8	2		ICPES	84NAD 01
87	29		ITNA	79REN 03
Be (ng/g)				
< 30		L	ICPES	82KUE 01
< 30		L	ICPES	82KUE 01
< 30		L	ICPES	82KUE 01
< 60		L	ICPES	78CAP 01
< 80			ICPES	84WOL 02
16	6		ICPES	83SCH 03

TABLE 1570-2: INDIVIDUAL DATA FOR NBS SRM 1570 (cont.)

Conc	Uncer	Com	Method	Reference
Bi (ng/g)				
<	8	L	ICPES	82HAH 01
Br (ug/g)				
42.4	2.4	5	ITNA	80HOE 01
43.6	2.3	5	IENA	79GLA 02
45			ITNA	84GLA 11
45	3.3		ITNA	80SLO 01
45.1	0.3	5	IENA	79GLA 02
46	2	5	ITNA	80HOE 01
47	4		ITNA	84GLA 02
47.2	0.5		ITNA	77NAD 02
48			ITNA	78CAP 01
48	9.4		ITNA	79REN 03
51.1	2.5		CPXRF	84BIS 01
52	4.8		ITNA	79KOB 03
54	3	35	NAA	81GLA 03
55.3	3.8	5	ITNA	80TOU 01
138			EXRF	81PAR 01
C (%)				
40.7	1		CB	77WAT 02
40.82	0.81		CB	80SCH 02
Ca (%)				
0.82	0.11		ITNA	80SLO 01
0.85	0.01		CPXRF	84BIS 01
0.99	0.05		ICPES	84ABD 01
1.19	0.09	6	EXRF	79MAT 01
1.21		35	AA	81GLA 04
1.22	0.02		ICPES	84WOL 02
1.24	0.08	11	ICPES	82JON 01
1.25	0.01	11	ICPES	82JON 01
1.29	0.03	6	ICPES	82KUE 01
1.29	0.04	11	ICPES	81MUN 01
1.3			ICPES	81GOO 01
1.34	0.07		ICPES	85WHI 02
1.34	0.23		ICPES	84NAD 01
1.347	0.014		NM	81YUZ 01
1.35	0.025	6	ICPES	82KUE 01
1.35	0.06	11	ICPES	81MUN 01
1.36	0.04	11	ICPES	82JON 01
1.37	0.07	5	ITNA	80TOU 01
1.38	0.014	6	ICPES	82KUE 01
1.39	0.03	11	ICPES	82JON 01
1.4	0.04	6	EXRF	79MAT 01
1.44	0.035		ICPES	83SCH 03
1.46			ITNA	78CAP 01
Ca (%) cont.				
1.49	0.1		ITNA	77NAD 02
1.54	0.01		ICPES	79HER 01
1.62			ICPES	78CAP 01
1.78	0.25		ITNA	79REN 03
2.45			EXRF	81PAR 01
Cd (ug/g)				
1.2			FAA	80PRE 01
1.2	0.05		FAA	84KUR 01
1.2	0.15		ASV	82GAJ 01
1.23	0.16		ASV	82SAT 02
1.3			FAA	82PRE 01
1.3	0.05		AA	83RAP 01
1.3	0.2	11	ICPES	81MUN 01
1.32			ASV	78CAP 01
1.38	0.08		RTNA	80SLO 01
1.39	0.11		ICPES	82EVA 01
1.4	0.08	11	ICPES	82JON 01
1.4	0.1		ICPES	83SCH 04
1.4	0.1		ICPES	84ABD 01
1.4	0.14		AA	82EVA 01
1.4	0.2		ICPES	83SCH 03
1.41	0.03	6	ICPES	82KUE 01
1.42	0.03	6	ICPES	82KUE 01
1.45	0.07	6	ICPES	82KUE 01
1.46	0.02		NAA	76DER 01
1.46	0.04		FAA	80LEG 01
1.47	0.12		FAA	83DEL 01
1.48			RTNA	85TIA 01
1.49	0.08	11	ICPES	82JON 01
1.5	0.3		AA	84KAN 01
1.52	0.07		RTNA	77DER 01
1.6	0.2		FAA	81KNA 01
1.67	0.29		SSMS	77PAU 01
1.7	0.1		RTNA	76GAL 01
1.7	0.2	D	FAA	80SCH 08
1.7	0.2		AA	80SCH 05
1.7	0.3	11	ICPES	81MUN 01
2	0.1		AA	76GAL 01
2.1	0.2		ICPES	79HER 01
2.2	1	11	ICPES	82JON 01
2.8	0.1	11	ICPES	82JON 01
Ce (ng/g)				
240	30		RTNA	80SLO 01
671	162		RTNA	83TJI 01

TABLE 1570-2: INDIVIDUAL DATA FOR NBS SRM 1570 (cont.)

Conc	Uncer	Com	Method	Reference
Cl (ug/g)				
6000		35	ITNA	81GLA 04
6290			ITNA	78CAP 01
6500	300		CPXRF	79REN 02
6800	100		ITNA	80SLO 01
7000			ITNA	84GLA 11
7000	120		ITNA	84GLA 02
10000	1000		ITNA	77NAD 02
Co (ug/g)				
0.9	0.1		PAA	80YAM 01
1.41			ITNA	78CAP 01
1.42	0.1		AA	83RAP 01
1.47	0.1		AA	80JAC 01
1.49	0.05		RTNA	80SLO 01
1.5	0.1		ITNA	79KOB 03
1.5	0.2		ITNA	79REN 03
1.5	0.4		ICPES	84ABD 01
1.6	0.1	5	ITNA	80TOU 01
1.65			FAA	82HOE 01
1.68	0.03		RTNA	77MEL 01
1.7	0.1		ITNA	76GAL 01
1.76	0.01		ITNA	77NAD 02
3.2	0.2		AA	76GAL 01
Cr (ug/g)				
1.9	0.3	11	ICPES	81MUN 01
2.0			ICPES	81GOO 01
3.06	0.3		AA	80JAC 01
3.33	0.74		ICPES	84NAD 01
3.5	0.3	6	ICPES	82KUE 01
3.54	0.3	6	ICPES	82KUE 01
3.6	0.5	11	ICPES	82JON 01
3.7	1.2	11	ICPES	81MUN 01
3.75		11	AA	79HOE 02
3.9			POL	83HOL 01
4.0	0.34		ITNA	85NDI 01
4.2	0.7		ICPES	83SCH 03
4.3	0.5		ITNA	77NAD 02
4.3	0.7	6	ICPES	82KUE 01
4.4		11	AA	79HOE 02
4.4			FAA	82HOE 01
4.4	0.2		ICPES	84ABD 01
4.47	0.4		FAA	83CAR 02
4.5	0.2		RTNA	76GAL 01
4.5	0.3		ITNA	79KOB 03
4.51		11	AA	79HOE 02
4.6	0.2	11	ICPES	82JON 01
4.7	0.15		AA	83RAP 01

Conc	Uncer	Com	Method	Reference
Cr (ug/g) cont.				
4.7	0.3		DCPES	79REE 01
4.7	0.3	D	DCPES	81REE 01
4.7	0.4		ITNA	82GLA 02
4.8			ITNA	78CAP 01
5.2	0.5		ITNA	76GAL 01
5.2	1.5		AE+AF	82GOL 01
5.8	0.2		AA	76GAL 01
6	0.7		PAA	80YAM 01
6.2	0.1		ICPES	79HER 01
7.5	1.6		ITNA	79REN 03
20.5	2.8	11	RTNA	76STE 01
21	2		RTNA	77MEL 01
21.3	2.6	11	RTNA	76STE 01
21.8	1.5	11	RTNA	76STE 01
23.9	0.9	11	RTNA	76STE 01
24.5	1.2	11	RTNA	76STE 01
24.8	2.8		ITNA	76STE 01
Cs (ng/g)				
<	200	L	ITNA	82GLA 02
48	5		ITNA	77NAD 02
63	3		ITNA	84GLA 11
64	2		ITNA	84GLA 02
68	8		ITNA	85GAU 04
270	40		RTNA	77MEL 01
320	40		ITNA	79REN 03
Cu (ug/g)				
<	20		ITNA	84GLA 11
5.3	1.3		ITNA	85NDI 01
9.1	0.4		AA	76GAL 01
9.5			ICPES	81GOO 01
10.2	1		ICPES	82EVA 01
10.5	0.3	11	ICPES	81MUN 01
10.6	0.9		CPXRF	84BIS 01
10.7	0.5		ICPES	83SCH 03
10.8			ASV	83HOL 01
10.9	0.3	11	ICPES	82JON 01
10.9	0.6		RTNA	80SLO 01
11.0	0.2	7	RTNA	80GAL 02
11.0	0.2		AA	83RAP 01
11.1	0.2	11	ICPES	82JON 01
11.1	0.5	11	ICPES	82JON 01
11.1	0.5	11	ICPES	81MUN 01
11.2	0.4	11	ICPES	82JON 01
11.4	0.5		RTNA	79KOB 01
11.5	0.4		FAE	76EPS 01
11.5	0.5		SSMS	77PAU 01

TABLE 1570-2: INDIVIDUAL DATA FOR NBS SRM 1570 (cont.)

Conc	Uncer	Com	Method	Reference
Cu (ug/g) cont.				
11.6	0.3		ICPES	84WOL 02
11.6	0.7		ITNA	79KOB 03
11.6	0.7		RTNA	78KOB 01
11.8	0.3		RTNA	77DER 01
11.8	0.3	6	ICPES	82KUE 01
11.8	2.5		VV	80SCH 05
12.0			RTNA	85TIA 01
12.0	0.2		IDMS	84BRO 03
12.0	0.3	6	ICPES	82KUE 01
12.0	0.5		ICPES	80SCH 08
12	1	2	FAA	84MIL 01
12	1	2	FAA	84MIL 01
12.06	0.03		COLOR	77BUR 01
12.1			AA	80EVA 01
12.1	0.1		COLOR	76EPS 01
12.1	0.2		ICPES	79HER 01
12.1	0.4		AA	82EVA 01
12.14	0.61		RTNA	85DYB 01
12.2	0.1	6	ICPES	82KUE 01
12.2	0.3		AA	85KOJ 01
12.3			ICPES	78CAP 01
12.3		11	AA	79HOE 02
12.6			FAA	78CAP 01
12.6	0.2		ICPES	83SCH 04
12.6	1.4	6	EXRF	79MAT 01
12.7	0.4		AA	76EPS 01
13	0.4		ICPES	84ABD 01
13	1	D	DCPES	81REE 01
13	1		DCPES	79REE 01
13.2		11	AA	79HOE 02
18	3		ICPES	84NAD 01
Eu (ng/g)				
<	200	L	ITNA	78CAP 01
11	1		RTNA	83TJI 01
14	1		ITNA	79KOB 03
20	1		ITNA	77NAD 02
F (ug/g)				
4.3	0.4		ISE	83KNA 01
4.4	0.3		ISE	84GLA 02

Conc	Uncer	Com	Method	Reference
Fe (ug/g)				
178	2		DCPES	81REE 01
384	79	11	ICPES	81MUN 01
470	50	6	ICPES	82KUE 01
478			ICPES	78CAP 01
491	20	11	ICPES	82JON 01
494			FAA	78CAP 01
500	26	6	FAA	84FUD 02
506	34		CPXRF	84BIS 01
508	14		ICPES	83SCH 03
510			ITNA	78CAP 01
511	7		ICPES	79HER 01
516	36		ICPES	84NAD 01
518	8	11	ICPES	82JON 01
522	14	11	COLOR	82SCH 03
525	11	6	EXRF	79MAT 01
527	30		ICPES	84ABD 01
530	11	6	ICPES	82KUE 01
540	10	6	ICPES	82KUE 01
540	18	D	ICPES	80SCH 08
540	18		ICPES	80SCH 05
540	23		ITNA	79KOB 03
541	15	11	ICPES	82JON 01
545			AA	80EVA 01
548	9		NM	80SUZ 01
551		11	AA	79HOE 02
552	10	6	FAA	84FUD 02
556			ICPES	81GOO 01
556	11	11	COLOR	82SCH 03
556	15	2	FAA	84MIL 01
557	8		ITNA	79DAS 01
557	8		RTNA	80SLO 01
557	19	11	ICPES	82JON 01
558	12	2	FAA	84MIL 01
562	25		AA	83RAP 01
566	18		ITNA	77NAD 02
570		11	AA	79HOE 02
576	18	11	ICPES	81MUN 01
597	6	6	EXRF	79MAT 01
600	90	35	ITNA	81GLA 03
601	12		ICPES	84WOL 02
660	300		ITNA	79REN 03
763	34		RTNA	77MEL 01
1200			EXRF	81PAR 01
Gd (ng/g)				
60	21		RTNA	83TJI 01

TABLE 1570-2: INDIVIDUAL DATA FOR NBS SRM 1570 (cont.)

Conc	Uncer	Com	Method	Reference
Ge (ng/g)				
<	20	L	ICPES	82HAH 01
H (%)				
5.54	0.08		CB	80SCH 02
5.6	0.1	35	TCGS	79GLA 04
H2O (%)				
6			VV	85TAN 01
Hf (ng/g)				
40	20		RTNA	80SLO 01
Hg (ng/g)				
25		11	CVAA	79HOE 02
26	8		RTNA	80SLO 01
29			CVAA	83MAR 05
30	5		CVAA	82GLA 02
33	16		CVAA	82DOO 01
34	3		ITNA	77NAD 02
110	20		RTNA	77MEL 01
I (ug/g)				
1.08	0.04		MS	85SCH 01
1.08	0.16		IENA	82SAT 01
1.1	0.2		PAA	77WIL 01
1.267	0.054	35	RTNA	81ALL 01
1.325	0.055		RTNA	81STR 01
1.325	0.055	34	RTNA	81ALL 01
In (ng/g)				
1.2	0.1		RTNA	78KOB 01
1.3	0.2		RTNA	79KOB 01
K (%)				
2.58	0.09	11	ICPES	81MUN 01
3.09	0.54		ICPES	84NAD 01
3.26	0.23		ITNA	79REN 03
3.29	0.09	2	FAA	84MIL 01
3.29	0.18		ICPES	79HER 01
3.43	0.11		ITNA	77NAD 02
3.44	0.2	11	ICPES	81MUN 01
3.46			ITNA	84GLA 11
3.52	0.1	6	ICPES	82KUE 01

Conc	Uncer	Com	Method	Reference
K (%) cont.				
3.53	0.032	6	ICPES	82KUE 01
3.54			ITNA	80EDD 01
3.56		1	AA	78SZY 01
3.57	0.04	6	ICPES	82KUE 01
3.57	0.29	2	FAA	84MIL 01
3.58	0.06		ICPES	84ABD 01
3.59			ICPES	79COO 01
3.6	0.06		ICPES	85WHI 02
3.6	0.09		ITNA	79KOB 03
3.6	0.2	11	ICPES	82JON 01
3.61		1	AA	78SZY 01
3.61	0.35		ITNA	82EHM 01
3.65	0.21		ICPES	84WOL 02
3.7	0.04	11	ICPES	82JON 01
3.7	0.1	11	ICPES	82JON 01
3.73			ITNA	78CAP 01
3.74	0.07		ITNA	80SLO 01
3.9	0.1	11	ICPES	82JON 01
4.02	0.08		CPXRF	84BIS 01
4.04	0.06	6	EXRF	79MAT 01
4.85	0.05	6	EXRF	79MAT 01
7.95			EXRF	81PAR 01
La (ng/g)				
260	50		RTNA	80SLO 01
315			NM	83KAT 01
320	30		ITNA	77NAD 02
350	10		NM	85KAT 02
350	60		ITNA	79REN 03
361	89		RTNA	83TJI 01
400	50		ITNA	85KAT 02
Li (ug/g)				
1.93	0.06		ICPES	84NAD 01
2.04	0.01		AA	85EVA 01
Lu (ng/g)				
<	5	L	RTNA	80SLO 01
3	1		RTNA	83TJI 01

TABLE 1570-2: INDIVIDUAL DATA FOR NBS SRM 1570 (cont.)

Conc	Uncer	Com	Method	Reference
Mg (ug/g)				
6990			ICPES	81GOO 01
7000			ICPES	78CAP 01
7300	500		ITNA	80SLO 01
7800	200		ICPES	84ABD 01
8300	800		ICPES	84NAD 01
8340	130		ICPES	84WOL 02
8400			FAA	78CAP 01
8500	120	11	ICPES	81MUN 01
8550	65	6	ICPES	82KUE 01
8600	230	6	ICPES	82KUE 01
8600	400	11	ICPES	82JON 01
8600	500		ICPES	85WHI 02
8700	100		ICPES	79HER 01
8700	500	2	FAA	84MIL 01
8790	150	6	ICPES	82KUE 01
8800	100	11	ICPES	82JON 01
8800	270		ICPES	83SCH 03
8833	299	11	ICPES	81MUN 01
8900	300	11	ICPES	82JON 01
9000	200	11	ICPES	82JON 01
9000	600		ITNA	78CAP 01
9200	300	2	FAA	84MIL 01
9800			ITNA	77NAD 02
Mn (ug/g)				
1.3	0.1		DCPES	81REE 01
49	2	11	ICPES	82JON 01
102	3		AA	76GAL 01
118	3		ITNA	76GAL 01
146	32		AE+AF	82GOL 01
155			FAA	78CAP 01
156		11	AA	79HOE 02
156	4		ICPES	84ABD 01
156	5		ITNA	79KOB 03
157			ICPES	78CAP 01
157	5	6	FAA	84FUD 02
157	13	11	ICPES	81MUN 01
158	7	11	ICPES	82JON 01
158	13	2	FAA	84MIL 01
159		11	AA	79HOE 02
160		35	ITNA	81GLA 04
160	3	11	ICPES	82JON 01
160	3		ICPES	84WOL 02
161	6		ITNA	77NAD 02
162	4	6	FAA	84FUD 02
162	7		CPXRF	84BIS 01
162	9		ITNA	84GLA 02
164			ITNA	84GLA 11
165	3	6	ICPES	82KUE 01

Conc	Uncer	Com	Method	Reference
Mn (ug/g) cont.				
165	3	6	EXRF	79MAT 01
165	8	2	FAA	84MIL 01
165	10		ICPES	85WHI 02
166	1		ICPES	79HER 01
166	5	11	ICPES	82JON 01
167	5		ICPES	83SCH 03
167	6	11	ICPES	82JON 01
167	7		ICPES	82EVA 01
168	3	D	ICPES	80SCH 08
168	3		VV	80SCH 05
168	4		AA	83RAP 01
168	6		ICPES	83SCH 04
169	4		ITNA	80SLO 01
170			AA	80EVA 01
170	4		AA	82EVA 01
171			ITNA	78CAP 01
171	1	6	ICPES	82KUE 01
172	5	6	ICPES	82KUE 01
173	3		ICPES	84NAD 01
176	2	11	ICPES	81MUN 01
178	2		DCPES	79REE 01
184	10	6	EXRF	79MAT 01
185			ICPES	81GOO 01
187.9	18.9		PAA	80YAM 01
200			ITNA	79REN 03
684			EXRF	81PAR 01
Mo (ng/g)				
200	100	11	ICPES	82JON 01
200	100	11	ICPES	82JON 01
300	41		COLOR	85EVA 02
300	100	11	ICPES	82JON 01
300	100		RTNA	80SLO 01
400	200	11	ICPES	82JON 01
420			RTNA	85TIA 01
N (%)				
5.31			VV	85TAN 01
5.62	0.11		CB	80SCH 02
6	0.4	35	TCGS	79GLA 04

TABLE 1570-2: INDIVIDUAL DATA FOR NBS SRM 1570 (cont.)

Conc	Uncer	Com	Method	Reference
Na (%)				
1.13	0.02		ITNA	80SLO 01
1.24	0.21		ICPES	84NAD 01
1.28	0.1		ITNA	82SCH 05
1.29	0.11	11	ICPES	81MUN 01
1.31	0.07		ITNA	77NAD 02
1.33	0.03	11	ICPES	81MUN 01
1.33	0.05		ITNA	79KOB 03
1.41			ICPES	81GOO 01
1.42	0.02		ICPES	84WOL 02
1.43			ITNA	84GLA 02
1.43	0.03		ICPES	84ABD 01
1.44			ITNA	78CAP 01
1.48		35	ITNA	81GLA 04
1.5			ITNA	84GLA 11
1.54	0.14		ITNA	79REN 03
1.547	0.021		ICPES	85WHI 02
1.55		1	AA	78SZY 01
1.56		1	AA	78SZY 01
Nd (ng/g)				
306	73		RTNA	83TJI 01
Ni (ug/g)				
1.3	0.1		DCPES	79REE 01
2.3	0.5		RTNA	80SLO 01
4.1	0.5		ITNA	77NAD 02
4.8	0.7		ICPES	82EVA 01
4.9	0.2	11	ICPES	82JON 01
5	7		ICPES	84WOL 02
5.1	0.1	11	ICPES	82JON 01
5.1	0.4	11	ICPES	81MUN 01
5.12			VOLT	81PIH 01
5.2	0.3		CPXRF	84BIS 01
5.4	0.1	11	ICPES	82JON 01
5.4	0.1	11	ICPES	82JON 01
5.4	1	6	EXRF	79MAT 01
5.5	0.5		ICPES	83SCH 03
5.51	0.32	6	ICPES	82KUE 01
5.6	0.3		AA	83RAP 01
5.7	0.3	11	ICPES	81MUN 01
5.8	0.2		AA	82EVA 01
6.03	0.52	6	ICPES	82KUE 01
6.1	0.2		PAA	80YAM 01
6.17	0.72	6	ICPES	82KUE 01
6.4			POL	83HOL 01
6.5	0.2		RTNA	78KOB 01
6.5	0.3		RTNA	79KOB 01
6.7	0.8		ICPES	84ABD 01
7.5	0.5		RTNA	77MEL 01
8.1			FAA	82HOE 01
8.1	0.2		ICPES	79HER 01

Conc	Uncer	Com	Method	Reference
P (ug/g)				
4100	200		ICPES	84NAD 01
4500			ICPES	78CAP 01
4530	120	11	COLOR	84LIN 01
4600	100		ICPES	84ABD 01
4814	300		ICPES	84PRI 01
4865			ICPES	81GOO 01
5082	192	11	ICPES	81MUN 01
5100			FAA	79EDI 01
5100	120		ICPES	84WOL 02
5100	200		CPAA	83MAS 02
5120	60	11	ICPES	81MUN 01
5200	200	11	ICPES	82JON 01
5240	70	6	ICPES	82KUE 01
5300	70	6	ICPES	82KUE 01
5300	100	11	ICPES	82JON 01
5300	300		ICPES	85WHI 02
5350	45	6	ICPES	82KUE 01
5360	270		ICPES	81OWE 01
5400			ICPES	79EDI 01
5500	200	11	ICPES	82JON 01
5500	300	14	FAA	84LIN 01
5500	500	14	AA	84LIN 01
5600	100	11	COLOR	84LIN 01
5600	300	14	FAA	84LIN 01
5600	400	7	NM	81SHI 01
5700	200	11	ICPES	82JON 01
6000	100		ICPES	79HER 01
Pb (ug/g)				
0.8	0.1	11	ICPES	82JON 01
0.8	0.3	11	ICPES	82JON 01
1.0	0.1		FAA	80LEG 01
1.0	0.8		ICPES	79HER 01
1.02			FAA	82HOE 01
1.03	0.15		ASV	82GAJ 01
1.04	0.09		ASV	80SZY 01
1.09	0.06		FAA	79DAB 02
1.1		11	FAA	79HOE 02
1.1	0.06		AA	82EVA 01
1.1	0.08		ASV	82SAT 02
1.1	0.1		AA	80SCH 05
1.1	0.1	D	FAA	80SCH 08
1.1	0.2		FAA	81KNA 01
1.12	0.03		SSMS	77PAU 01
1.16	0.08		FAA	82RAI 01
1.18	0.12		AA	84STO 01
1.2			FAA	80PRE 01
1.25			ASV	78CAP 01
1.25	0.2		AA	83RAP 01

TABLE 1570-2: INDIVIDUAL DATA FOR NBS SRM 1570 (cont.)

Conc	Uncer	Com	Method	Reference
Pb (ug/g) cont.				
1.3			FAA	82PRE 01
1.3		6	FAA	81HIN 01
1.3		6	FAA	82KOI 01
1.3	0.4		HAA	82WEI 01
1.4		6	FAA	82KOI 01
1.4		6	FAA	81HIN 01
1.75	1.33		ICPES	82EVA 01
2.0	1.4		PAA	80YAM 01
2.2	0.6		ICPES	83SCH 03
2.5	0.4		ICPES	84ABD 01
3.1	1.6	11	ICPES	81MUN 01
3.4	0.6		AA	84KAN 01
4.4	3.1	11	ICPES	81MUN 01
Pd (ng/g)				
<	2	L	RTNA	81BYR 01
Pr (ng/g)				
<	60	L	RTNA	80SLO 01
Rb (ug/g)				
10			ITNA	78CAP 01
11	1	35	ITNA	81GLA 03
11.32	3.1		ITNA	79REN 03
11.6	0.3		ITNA	77NAD 02
12.2	0.7		FAA	83GRO 02
12.7	0.47		AA	85EVA 01
17	3		RTNA	77MEL 01
39			EXRF	81PAR 01
S (ug/g)				
2400	600		CPXRF	79REN 02
3600	500		CB	84GLA 11
3834	58		ICPES	84PRI 01
4400	400		CB	86BOW 01
4440		D	CB	85JAC 01
4440	60	6	CB	84JAC 01
4500	270		WXRF	86BOW 01
4800	200		ICPES	85WHI 02
4860		D	CB	85JAC 01
4860	160	6	CB	84JAC 01

Conc	Uncer	Com	Method	Reference
Sb (ng/g)				
14	3	H	ICPES	82HAH 01
27	6		ITNA	77NAD 02
31	1		RTNA	80KOS 02
38	3		RTNA	79HOE 01
40	10	7	RTNA	80GAL 02
44	2		ITNA	79KOB 03
50			ITNA	78CAP 01
50	20		RTNA	80SLO 01
690	150		ITNA	79REN 03
Sc (ng/g)				
150	30	5	ITNA	80TOU 01
153	6		ITNA	86GAU 01
159	12		ITNA	84GLA 11
160			ITNA	78CAP 01
170			ITNA	80EDD 01
170	4		ITNA	77NAD 02
170	20		RTNA	80SLO 01
180	10		ITNA	79KOB 03
180	20		RTNA	77MEL 01
470	40		ITNA	79REN 03
Se (ng/g)				
24	10	9	ITNA	80WAN 01
25			FAA	78CAP 01
33	3	11	GC	81UCH 02
33	3	11	GC	81UCH 02
37			FLUOR	79WAT 02
40	10		RTNA	80KNA 01
42.9			HAA	77IHN 01
60	20		RTNA	80SLO 01
66	9		ITNA	77NAD 02
360	20		FAA	82JUL 01
400	110		HAA	82JUL 01
510	80		RTNA	82POL 01
Si (ug/g)				
2900	900		ICPES	84NAD 01
Sm (ng/g)				
33	4	5	ITNA	80TOU 01
54	21		RTNA	83TJI 01
80	20		RTNA	80SLO 01
200	140		ITNA	79REN 03

TABLE 1570-2: INDIVIDUAL DATA FOR NBS SRM 1570 (cont.)

Conc	Uncer	Com	Method	Reference
Sn (ug/g)				
< 0.02		L	ICPES	82HAH 01
3.1			ICPES	78CAP 01
Sr (ug/g)				
72.5	3.4		CPXRF	84BIS 01
75	1		ICPES	84NAD 01
79	1		ICPES	79HER 01
82.5	15.8		AE+AF	82GOL 01
83.4	0.2		IENA	85GAU 04
83.7	0.7		AA	85GAU 04
87	8		AA	85EVA 01
208			EXRF	81PAR 01
Ta (ug/g)				
0.23	0.08		ITNA	79REN 03
Tb (ng/g)				
8	1		RTNA	83TJI 01
Th (ng/g)				
110	10		ITNA	77NAD 02
150	40		RTNA	80SLO 01
Ti (ug/g)				
8.9	1.4		ICPES	83SCH 03
16.5			ICPES	78CAP 01
28	2		ICPES	84NAD 01
Tl (ng/g)				
31	5		SSMS	77PAU 01
U (ng/g)				
42			DNA	84GLA 02
45	0.8	35	DNA	80GLA 04
47	5		DNA	86GAU 01
48	2		DNA	85GAU 04
69	120	R	DNA	81GLA 03

Conc	Uncer	Com	Method	Reference
V (ug/g)				
0.928	0.0013	11	RTNA	82HEY 02
1.06	0.17		ITNA	77NAD 02
1.08	0.07	D	DCPES	81REE 01
1.08	0.07		DCPES	79REE 01
1.093	0.085		ITNA	82HEY 02
1.13	0.01		RTNA	78BYR 01
1.13	0.018	11	RTNA	82HEY 02
1.2	0.06		ITNA	76GAL 01
1.207	0.0031	11	RTNA	82HEY 02
1.28	0.07	11	ICPES	82JON 01
1.34	0.06	11	ICPES	82JON 01
1.44			COLOR	85EVA 02
1.5	0.2		ICPES	83SCH 03
1.7			ITNA	78CAP 01
W (ng/g)				
140	50		RTNA	80SLO 01
Yb (ng/g)				
2	1		RTNA	80SLO 01
23	2		RTNA	83TJI 01
Zn (ug/g)				
42	2		RTNA	80SLO 01
43.1	4		ICPES	82EVA 01
45.9	2.8		RTNA	77DER 01
46	1	11	ICPES	82JON 01
46	2	11	ICPES	82JON 01
46.2	0.6	11	ICPES	82JON 01
46.7		11	AA	79HOE 02
47	0.48		ITNA	79REN 03
47	1.2		ICPES	84WOL 02
47	2	2	FAA	84MIL 01
47	2.5		ICPES	83SCH 03
47	4		ICPES	84ABD 01
48			ICPES	78CAP 01
48			ITNA	78CAP 01
48	1	11	ICPES	82JON 01
48	2	11	ICPES	82JON 01
48	3	11	ICPES	82JON 01
48	3	D	ICPES	80SCH 08
48	3		ICPES	80SCH 05
48.9	4.6	11	ICPES	81MUN 01
49.2	0.1		PAA	80YAM 01
49.5	0.7		SSMS	77PAU 01
49.8	1.3	6	ICPES	82KUE 01

TABLE 1570-2: INDIVIDUAL DATA FOR NBS SRM 1570 (cont.)

Conc	Uncer	Com	Method	Reference
Zn (ug/g) cont.				
50			ICPES	81GOO 01
50	1		ITNA	77NAD 02
50	3		ICPES	85WHI 02
50.6	1.3	6	ICPES	82KUE 01
50.8			AA	80EVA 01
50.8	1.9		AA	82EVA 01
51	2		ICPES	84NAD 01
51.2	0.6	6	ICPES	82KUE 01
52	1		DCPES	79REE 01
52	1	D	DCPES	81REE 01
52	2.2		ITNA	79KOB 03
52	3		AA	83RAP 01
52.6	2.5	11	ICPES	81MUN 01
52.9	2.2	6	EXRF	79MAT 01
53		11	AA	79HOE 02
53	3	11	ICPES	82JON 01
54	1		ICPES	79HER 01
54	3		ICPES	83SCH 04
55	2	2	FAA	84MIL 01
57	8		RTNA	77MEL 01
59.7			FAA	78CAP 01
60.1	2	6	EXRF	79MAT 01
66.8	8		CPXRF	84BIS 01
72.5	1.6		RTNA	76GAL 01
72.8	1.3		AA	76GAL 01
119			EXRF	81PAR 01

TABLE 1571-1: COMPILED DATA FOR NBS SRM 1571 ORCHARD LEAVES (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS	MEDIAN	RANGE	AA	NAA	ICPES	XRF	OTHER METHODS		
		Mean ± SD	Mean ± SD (n)			Mean ± SD (n)	Mean ± SD (n)	Mean ± SD (n)	Mean ± SD (n)	Mean ± SD (n) Method	Mean (n) Method	
Ag	ng/g	---	320 (2)	---	13 - 620	---	316.5 (2)	---	---	---	---	
Al	ug/g	---	323 ± 112 (51)	347	123 - 520	455 (2)	400 ± 60 (19)	241 ± 98 (11)	488 (1)	210 ± 50 (9) OES	430 (1) CPAA	347 (2) POL
Al	ug/g	---	---	---	---	---	---	---	---	405 (1) SSMS	351 (2) 14NAA	144 (2) COLOR
As	ug/g	10 ± 2	10.7 ± 1.3 (179)	10.3	8 - 14.3	11 ± 2 (11)	10.8 ± 1.5 (77)	10.8 ± 1.5 (14)	13.0 ± 2.5 (14)	10.1 ± 1.2 (5) PAA	13.0 ± 1.3 (7) SSMS	11.9 (1) FAE
As	ug/g	---	---	---	---	---	---	---	---	10 (1) MPOES	---	---
As	ug/g	---	---	---	---	---	---	---	---	9.8 (1) ESCA	10.6 (2) 14NAA	11.5 (1) GCMES
As	ug/g	---	---	---	---	---	---	---	---	11 (1) ICPMS	11.7 (1) NM	15 (2) CPAA
As	ug/g	---	---	---	---	---	---	---	---	12 (1) AE±AF	10.8 ± 1.7 (4) COLOR	10.37 (2) ASV
As(III)	ug/g	---	4.9 (1)	---	---	---	---	---	---	---	---	---
Au	ng/g	---	1.4 ± 0.4 (18)	1.4	0.72 - 2	---	1.4 ± 0.4 (18)	---	---	---	---	---
B	ug/g	33 ± 3	33 ± 3 (36)	33	25.15 - 40	33.5 (2)	---	33 ± 4 (11)	---	32 ± 5 (11) OES	33.1 ± 0.5 (3) COLOR	23.8 (2) AE±AF
B	ug/g	---	---	---	---	---	---	---	---	32.6 ± 0.7 (5) TCGS	35.2 ± 1.5 (4) CPAA	31.2 (1) NM
Ba	ug/g	44	43 ± 4 (46)	43	35 - 52	47.15 (2)	41 ± 6 (22)	43 ± 5 (10)	36.95 (2)	44 ± 6 (6) SSMS	44 ± 5 (5) OES	51.3 (1) PAA
Be	ng/g	27 ± 10	24 ± 8 (7)	26	13.7 - 36	31 (2)	---	16 ± 3 (3)	---	---	26 (1) FLUOR	---
Bi	ng/g	100	90 ± 40 (9)	100	30 - 160	44 ± 18 (3)	---	---	---	160 (1) AF	100 (1) SSMS	110 (3) POL
Br	ug/g	10	9.5 ± 1.1 (53)	9.4	7.1 - 12	---	9.7 ± 1.2 (43)	---	8.4 ± 1.3 (13)	---	---	---
C	%	---	46.1 ± 0.5 (6)	45.8	45.6 - 47	---	---	---	---	45.6 (1) COUL	46.0 ± 0.3 (3) CB	46.5 (2) TCGS
Ca	%	2.09 ± 0.03	2.04 ± 0.12 (92)	2.04	1.74 - 2.29	1.99 ± 0.16 (10)	2.07 ± 0.16 (22)	2.05 ± 0.08 (21)	1.99 ± 0.15 (15)	2.05 ± 0.11 (4) PAA	2.01 ± 0.22 (12) OES	2.16 (2) CPAA
Ca	%	---	---	---	---	---	---	---	---	1.98 ± 0.12 (3) 14NAA	1.96 (1) FE	1.69 (1) AF
Ca	%	---	---	---	---	---	---	---	---	2.13 (1) SSMS	2.08 ± 0.06 (3) COLOR	2.05 (2) TCGS
Cd	ng/g	110 ± 10	119 ± 22 (86)	120	70 - 190	123 ± 35 (47)	130 ± 40 (17)	152 ± 42 (12)	---	110 (1) PAA	112 ± 11 (5) ASV	100 (1) POL
Cd	ng/g	---	---	---	---	---	---	---	---	100 (1) SSMS	150 (1) TCGS	108 (1) AE±AF
Cd	ng/g	---	---	---	---	---	---	---	---	116 ± 31 (5) AF	---	---
Ce	ug/g	---	0.99 ± 0.12 (17)	0.98	0.82 - 1.25	---	1.01 ± 0.13 (15)	---	---	---	0.96 (2) SSMS	---
Cl	ug/g	690	730 ± 40 (35)	730	630 - 810	605 (2)	720 ± 60 (23)	---	767 ± 34 (5)	707 ± 19 (3) PAA	638 (1) ISE	735 (2) TCGS
Co	ng/g	200	160 ± 37 (49)	150	100 - 260	160 ± 34 (5)	161 ± 37 (43)	190 (1)	---	107 (1) VOLT	105 (1) ASV	180 (1) SSMS
Cr	ug/g	2.6 ± 0.3	2.6 ± 0.3 (94)	2.6	1.9 - 3.3	2.5 ± 0.4 (18)	2.6 ± 0.3 (47)	2.3 ± 0.4 (12)	2.5 ± 0.3 (5)	2.22 (1) PAA	2.7 (1) DCPES	1.9 (1) POL
Cr	ug/g	---	---	---	---	---	---	---	---	2.8 ± 0.4 (8) SSMS	2.4 (1) CHEML	2.6 (1) NM
Cr	ug/g	---	---	---	---	---	---	---	---	---	2 (1) GC-AA	3.25 (2) ICPMS
Cs	ng/g	40	38 ± 9 (20)	40	20 - 50	---	40 ± 13 (19)	---	---	---	40 (1) SSMS	---
Cu	ug/g	12 ± 1	12.0 ± 1.4 (164)	12	8.9 - 16	11.8 ± 1.1 (41)	12.2 ± 1.8 (39)	12.3 ± 1.8 (28)	12.4 ± 2.4 (22)	12.1 (1) PAA	14.8 ± 2.4 (12) OES	11 (1) AE±AF
Cu	ug/g	---	---	---	---	---	---	---	---	11.4 ± 1.1 (7) SSMS	12.2 ± 0.8 (4) ICPMS	16.5 (2) CPAA
Cu	ug/g	---	---	---	---	---	---	---	---	12.4 ± 0.4 (6) ASV	11.8 ± 0.8 (3) POL	11.9 (1) HPLC
Dy	ng/g	---	82 ± 23 (4)	80	53 - 110	---	73 ± 18 (3)	---	---	---	110 (1) SSMS	---
Er	ng/g	---	29.7 ± 1.5 (3)	30	28 - 31	---	29.5 (2)	---	---	---	30 (1) SSMS	---
Eu	ng/g	---	24 ± 3 (20)	24	20 - 31	---	24 ± 3 (20)	---	---	---	20 (1) SSMS	---
F	ug/g	4	3.9 ± 0.5 (10)	3.8	3.12 - 4.8	3.6 (1)	---	---	---	---	4.0 ± 0.2 (5) ISE	4.8 (1) MS
F	ug/g	---	---	---	---	---	---	---	---	---	3.7 (1) DISE	3.40 (2) COLOR
Fe	ug/g	300 ± 20	286 ± 28 (147)	290	213 - 348	270 ± 40 (23)	289 ± 23 (43)	278 ± 32 (27)	297 ± 36 (22)	318 ± 24 (3) PAA	240 ± 60 (13) OES	237 (1) CHEML
Fe	ug/g	---	---	---	---	---	---	---	---	290 ± 8 (3) ASV	310 ± 34 (3) 14NAA	290 (1) CPAA
Fe	ug/g	---	---	---	---	---	---	---	---	279 ± 17 (5) COLOR	278 ± 34 (8) SSMS	312 (3) POL

TABLE 1571-1: COMPILED DATA FOR NBS SRM 1571 ORCHARD LEAVES (cont.)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		XRF		OTHER METHODS					
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method	Mean	(n)	Method
Ga	ng/g	80	88 ± 9	(4)	86	78 - 100	---		88 ± 9	(4)	---		---		---			---		
Gd	ng/g	---	68 ± 48	(6)	81	1.64 - 111	---		61 ± 51	(5)	---		---		---			100	(1)	SSMS
Ge	ng/g	---	150	(1)	---	---	---		---		150	(1)	---		---			---		
H	%	---	5.84 ± 0.26	(5)	5.91	5.54 - 6.1	---		---		---		---		---			5.7 ± 0.3	(3)	TCGS
H2O-	%	---	11.4	(1)	---	---	---		---		---		---		---			11.4	(1)	GRAV
Hf	ng/g	---	30 ± 5	(6)	28	23 - 37	---		30 ± 5.0	(6)	---		---		---			---		
Hg	ng/g	155 ± 15	155 ± 14	(87)	155	122 - 190	154 ± 16	(38)	160 ± 19	(46)	140	(1)	---		170	(2)	PAA	170	(2)	POT
Hg	ng/g	---	---		---	---	---		---		---		---		146	(1)	FAE	157	(1)	AF
Ho	ng/g	---	16 ± 5	(4)	13	11 - 22	---		15 ± 6	(3)	---		---		20	(1)	SSMS	---		
I	ng/g	170	186 ± 18	(9)	188	160 - 220	---		186 ± 18	(9)	---		---		---			---		
I-129	fCi/g	---	0.0060	(1)	---	---	---		0.0060	(1)	---		---		---			---		
In	ng/g	---	1.6 ± 0.3	(4)	1.6	1.23 - 2	---		1.6 ± 0.3	(4)	---		---		---			---		
Ir	ng/g	---	15	(1)	---	---	---		15	(1)	---		---		---			---		
K	%	1.47 ± 0.03	1.44 ± 0.07	(83)	1.45	1.26 - 1.62	1.41 ± 0.04	(9)	1.45 ± 0.06	(32)	1.45 ± 0.13	(16)	1.48 ± 0.10	(12)	1.45	(2)	PAA	1.41 ± 0.14	(11)	OES
K	%	---	---		---	---	---		---		---		---		1.43	(1)	FE	1.45 ± 0.11	(4)	14NAA
La	ug/g	---	1.17 ± 0.11	(30)	1.2	0.95 - 1.4	---		1.16 ± 0.13	(27)	---		---		---			1.32	(2)	NM
Li	ng/g	600	700 ± 150	(5)	770	500 - 830	630 ± 170	(3)	770	(1)	---		---		---			800	(1)	CPAA
Lu	ng/g	---	5.1 ± 2.5	(7)	4	2.9 - 8.5	---		5.1 ± 2.5	(7)	---		---		---			---		
Mg	ug/g	6200 ± 200	6050 ± 380	(71)	6100	5140 - 6800	5820 ± 320	(12)	6100 ± 400	(14)	5840 ± 470	(24)	5980	(2)	6125 ± 29	(4)	PAA	6400 ± 400	(12)	OES
Mg	ug/g	---	---		---	---	---		---		---		---		6500	(1)	COLOR	6700	(1)	CPAA
Mg	ug/g	---	---		---	---	---		---		---		---		6500 ± 500	(4)	14NAA	---		
Mn	ug/g	91 ± 4	89 ± 5	(139)	89.4	76 - 103	88 ± 5	(23)	90 ± 7	(44)	88 ± 7	(30)	90 ± 9	(23)	94 ± 3	(5)	PAA	88 ± 10	(9)	OES
Mn	ug/g	---	---		---	---	---		---		---		---		89 ± 2	(4)	ASV	90 ± 10	(7)	SSMS
Mn	ug/g	---	---		---	---	---		---		---		---		95	(1)	AE±AF	---		
Mo	ng/g	300 ± 100	290 ± 70	(24)	280	200 - 410	320 ± 100	(4)	300 ± 50	(12)	220 ± 40	(4)	---		400	(1)	PAA	200	(1)	SSMS
Mo	ng/g	---	---		---	---	---		---		---		---		410	(1)	POL	---		
N	%	2.76 ± 0.05	2.72 ± 0.04	(16)	2.71	2.61 - 2.81	---		---		---		---		2.73 ± 0.02	(6)	TITR	2.74	(1)	COLOR
N	%	---	---		---	---	---		---		---		---		---			2.74 ± 0.06	(3)	TCGS
N	%	---	---		---	---	---		---		---		---		---			2.66	(2)	14NAA
N-15	atom %	---	0.3670	(1)	---	---	---		---		---		---		---			0.37	(1)	MS
Na	ug/g	82 ± 6	89 ± 15	(49)	87	74 - 140	125.5	(2)	91 ± 22	(33)	102 ± 25	(6)	---		84 ± 4	(3)	PAA	116 ± 35	(5)	OES
Na	ug/g	---	---		---	---	---		---		---		---		---			80.3	(2)	FE
Nb	ug/g	---	< 0.3		---	---	---		---		---		---		< 0.3		PAA	---		
Nd	ng/g	---	510 ± 130	(9)	480	320 - 765	---		500 ± 150	(7)	---		---		---			540	(2)	SSMS
Ni	ug/g	1.3 ± 0.2	1.3 ± 0.2	(59)	1.3	0.95 - 1.8	1.26 ± 0.14	(15)	1.4 ± 0.25	(10)	1.4 ± 0.3	(9)	1.3 ± 0.3	(10)	1.43 ± 0.13	(3)	PAA	1.28	(2)	SSMS
Ni	ug/g	---	---		---	---	---		---		---		---		1.32	(1)	ASV	1.48 ± 0.18	(5)	POL
Ni	ug/g	---	---		---	---	---		---		---		---		1.26 ± 0.10	(3)	COLOR	2.2	(1)	14NAA
P	ug/g	2100 ± 100	2000 ± 180	(56)	2000	1560 - 2400	2040 ± 90	(6)	2080	(2)	2000 ± 250	(26)	2050 ± 240	(5)	1980 ± 280	(9)	OES	2120 ± 50	(4)	NM
P	ug/g	---	---		---	---	---		---		---		---		1910 ± 100	(3)	COLOR	2150 ± 240	(4)	14NAA

ELE	Mean	(n)	Method
Ga	---		
Gd	---		
Ge	---		
H	5.98	(2)	CB
H2O-	---		
Hf	---		
Hg	132.5	(2)	IDMS
Hg	141	(1)	SSMS
Ho	---		
I	---		
I-129	---		
In	---		
Ir	---		
K	1.39	(1)	CPAA
K	1.45	(2)	TCGS
La	1.15	(2)	SSMS
Li	---		
Lu	---		
Mg	6300	(1)	TCGS
Mg	6680	(1)	AF
Mg	---		
Mn	98	(1)	TCGS
Mn	92	(1)	DCPES
Mn	---		
Mo	230	(1)	COLOR
Mo	---		
N	2.73	(2)	NT
N	2.60	(2)	CB
N	2.76	(1)	GRAV
N-15	---		
Na	87	(1)	CPAA
Na	130	(1)	SSMS
Nb	---		
Nd	---		
Ni	1.3	(1)	HPLC
Ni	1.7	(1)	DCPES
Ni	1.32	(2)	VOLT
P	1500	(1)	SSMS
P	2000	(1)	CPAA

TABLE 1571-1: COMPILED DATA FOR NBS SRM 1571 ORCHARD LEAVES (cont.)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		XRF		OTHER METHODS							
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method	Mean ± SD	(n)	Method	Mean	(n)	Method
Pb	ug/g	45 ± 3	44 ± 3	(124)	44.7	37 - 54	44 ± 5	(54)	43 ± 2	(4)	45 ± 6	(19)	46 ± 4	(17)	45 ± 4	(5)	PAA	37 ± 6	(6)	SSMS	50	(1)	AE±AF
Pb	ug/g	---	---		---	---	---		---		---		---		45.4 ± 1.5	(7)	ASV	43.5	(2)	ICPMS	49.5	(2)	14NAA
Pb	ug/g	---	---		---	---	---		---		---		---		43	(1)	POT	47	(1)	IDMS	57	(1)	CPAA
Pb	ug/g	---	---		---	---	---		---		---		---		44.4 ± 0.6	(6)	POL	46.9 ± 1.8	(3)	DCPES	41.8	(1)	HPLC
Pd	ng/g	---	< 1		---	---	---		< 1		---		---		---			---			---		
Pr	ng/g	---	84 ± 26	(4)	65	60 - 270	---		93 ± 24	(3)	---		---		---			60	(1)	SSMS	---		
Pt	ng/g	---	430 ± 670	(3)	89.2	0.2 - 1200	---		430 ± 670	(3)	---		---		---			---			---		
Rb	ug/g	12 ± 1	11.4 ± 1.2	(67)	11.28	8.5 - 14.8	11.5	(1)	11.5 ± 1.2	(37)	---		11.3 ± 1.4	(18)	12.7 ± 0.3	(3)	PAA	10.9 ± 1.3	(6)	SSMS	11.4	(2)	14NAA
S	ug/g	1900	2040 ± 240	(31)	1960	1660 - 2600	---		---		1930 ± 90	(3)	2050 ± 330	(10)	2400	(1)	FE	1960 ± 50	(7)	CB	2000	(1)	IC
S	ug/g	---	---		---	---	---		---		---		---		1980	(2)	NM	1900 ± 400	(3)	TCGS	1690	(1)	TITR
S	ug/g	---	---		---	---	---		---		---		---		1860	(1)	COLOR	2600	(2)	CPAA	2400	(1)	TURB
Sb	ug/g	2.9 ± 0.3	2.9 ± 0.3	(76)	2.9	2.3 - 3.5	2.9 ± 0.4	(5)	2.9 ± 0.3	(51)	2.8 ± 0.4	(5)	---		3.30 ± 0.15	(4)	PAA	2.3	(1)	SSMS	3.5	(1)	AF
Sb	ug/g	---	---		---	---	---		---		---		---		---			2.7	(1)	14NAA	3.2	(1)	GCMES
Sc	ng/g	---	63 ± 14	(31)	65	40 - 90	---		64 ± 13	(30)	---		---		---			110	(1)	SSMS	---		
Se	ng/g	80 ± 10	81 ± 10	(96)	80	55 - 110	80 ± 15	(6)	86 ± 17	(54)	70 ± 8	(6)	---		77 ± 1	(3)	GC	82 ± 6	(10)	FLUOR	80	(1)	SSMS
Se	ng/g	---	---		---	---	---		---		---		---		83	(2)	ASV	83	(1)	DCPES	83	(1)	GCMES
Si	ug/g	---	550 ± 110	(6)	480	475.8 - 750	---		570 ± 160	(3)	---		480	(1)	---			2400	(1)	SSMS	750	(2)	14NAA
Sm	ng/g	---	114 ± 20	(21)	110	88 - 150	---		113 ± 18	(18)	---		---		---			140	(2)	TCGS	90	(1)	SSMS
Sn	ng/g	---	290 ± 60	(7)	290	180 - 375	---		293 ± 10	(3)	260	(2)	---		---			375	(1)	COLOR	230	(1)	SSMS
Sr	ug/g	37 ± 1	36 ± 3	(53)	36	28 - 44.2	34	(1)	38 ± 3	(13)	35.8 ± 2.4	(10)	35 ± 4	(17)	34 ± 4	(4)	PAA	34 ± 11	(3)	OES	40.5	(2)	CPAA
Sr	ug/g	---	---		---	---	---		---		---		---		32.5 ± 1.8	(6)	SSMS	36	(1)	ICPMS	35.4	(2)	14NAA
Ta	ng/g	---	8 ± 2	(4)	7	5 - 10	---		8 ± 2	(4)	---		---		---			---			---		
Tb	ng/g	---	13 ± 3	(9)	13	9 - 18	---		13 ± 3	(9)	---		---		---			---			---		
Te	ng/g	10	10.5	(2)	---	10 - 11	---		11	(1)	---		---		---			---			---		
Th	ng/g	64 ± 6	58 ± 12	(13)	59	40 - 85	---		58 ± 12	(13)	---		---		---			---			---		
Ti	ug/g	---	20 ± 7	(18)	19.3	6.6 - 30	24	(1)	40	(1)	8 ± 2	(3)	23 ± 5	(3)	28	(2)	14NAA	20 ± 4	(8)	SSMS	17.2	(1)	COLOR
Tl	ng/g	---	36 ± 3	(4)	34	32 - 40	38	(2)	---		---		---		---			33	(2)	ASV	---		
Tm	ng/g	---	7 ± 3	(3)	7	3.72 - 10	---		5.36	(2)	---		---		---			10	(1)	SSMS	---		
U	ng/g	29 ± 5	29 ± 3	(21)	30	25 - 34.3	---		29 ± 3	(16)	---		---		28 ± 3	(3)	PAA	28	(1)	NT	30	(1)	IDMS
V	ng/g	---	500 ± 110	(38)	500	300 - 700	370	(1)	500 ± 105	(29)	500 ± 60	(3)	---		---			480	(1)	COLOR	670	(2)	SSMS
W	ng/g	---	30 ± 20	(3)	20	16 - 50	---		30 ± 20	(3)	---		---		---			---			---		
Y	ng/g	---	480	(1)	---	---	---		---		---		---		---			480	(1)	SSMS	---		
Yb	ng/g	---	25 ± 5	(10)	21	20 - 34	---		25 ± 5	(9)	---		---		---			20	(1)	SSMS	---		
Zn	ug/g	25 ± 3	25 ± 2	(188)	25.3	19 - 32	26 ± 3	(43)	26 ± 3	(55)	25 ± 3	(36)	25 ± 3	(23)	28 ± 4	(7)	PAA	28 ± 6	(11)	OES	29.0	(2)	POL
Zn	ug/g	---	---		---	---	---		---		---		---		20	(1)	CPAA	26.4 ± 1.6	(4)	AF	28	(1)	DCPES
Zn	ug/g	---	---		---	---	---		---		---		---		25.5	(2)	AE±AF	24 ± 2	(8)	SSMS	28	(1)	FAE
Zn	ug/g	---	---		---	---	---		---		---		---		24.7 ± 1.9	(3)	ASV	---			---		
Zr	ug/g	---	2.0 ± 1.1	(7)	1.7	0.4 - 3.8	---		1.85	(2)	---		---		1.5	(2)	PAA	0.4	(1)	SSMS	3	(1)	14NAA
Zr	ug/g	---	---		---	---	---		---		---		---		3.8	(1)	CPAA	---			---		

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ag (ng/g)				
< 20		L	ITNA	74RAN 02
< 100			OES	75BOL 02
13	5		RTNA	80SLO 01
620	60		RTNA	74CAR 03
14000	1000		ITNA	84GIB 01
Al (ug/g)				
99			OES	75JON 02
103	22	6	ITNA	74HOF 01
110	140	R	AA	75MAN 01
123	11	11	ICPES	81MUN 01
128			OES	75JON 11
137.2	16.3	6	COLOR	85BAR 01
140	8		ICPES	81BLA 02
146	20		ICPES	79ABE 01
151.6	8.9	6	COLOR	85BAR 01
157			ICPES	78CAP 01
165			OES	75JON 07
187	27		ICPES	84ABD 01
196			OES	75JON 06
201			OES	75JON 01
223			OES	75JON 09
231			OES	75JON 04
241	7	11	ICPES	81MUN 01
243			OES	75JON 08
251			ICPES	81GOO 01
255			OES	75JON 05
278			OES	75JON 10
296	30		ITNA	77ZIK 01
322	18	11	ICPES	82JON 01
322	22		14NAA	81WIL 01
330			NAA	77LAU 01
333			ITNA	76BAT 01
337			ICPES	84NAD 01
343	460	RD	ITNA	79IMA 03
343	460	R	ITNA	79IMA 01
347	7.5		POL	72MAI 01
347	7.5		POL	77MAI 01
349.7	6.1		ITNA	77GOO 01
350			ITNA	78LAU 02
359	4		IENA	79JON 01
372	20		IENA	85GLA 02
377	21		ICPES	79MCQ 01
377	62		ICPES	85LIE 02
378	13		ITNA	75RIC 01
380			ITNA	84GLA 02
380	100		14NAA	81WIL 02
383			ITNA	78CAP 01
390	50		AA	79MCQ 01

Conc	Uncer	Com	Method	Reference
Al (ug/g) cont.				
398	24		ITNA	82EHM 01
405		11	SSMS	85VOS 01
407	11	6	ITNA	74HOF 01
420	58		ITNA	77HAM 01
430			CPAA	80HAN 01
430	40		ITNA	74RAN 02
440			RTNA	72MOR 03
460	7		VV	81NON 01
460	33		ITNA	79KOB 03
470		35	ITNA	81GLA 03
472	20		ITNA	84NDI 01
488			CPXRF	84KAU 01
500			ITNA	80CRE 01
520	180		FAA	77FUJ 01
824	50		ITNA	80SLO 01
As (ug/g)				
1.1			ITNA	78KEL 02
3.5	1.6		CPXRF	80KIR 01
7.5			SSMS	81VER 02
8	1		PAA	80SEG 01
8.5	0.3		HAA	74LOO 01
8.66	1.25		ITNA	79REN 03
8.7	0.2		RTNA	73HEY 01
8.8	0.4		ICPES	80HAA 01
8.9	2.2		ICPES	81NAD 01
9			RTNA	75ABU 01
9	0.4	H	ICPES	79ROB 01
9.1		1	IENA	79KUC 01
9.2			ITNA	79KUC 01
9.25	0.44		ITNA	84NDI 01
9.27			HAA	77IHN 01
9.3		35	HAA	77TAM 01
9.4	0.5		HAA	84NAR 01
9.4	1		HAA	76VIJ 02
9.5			HAA	85IKE 01
9.5			HAA	81INU 01
9.5			AA	83ELA 01
9.5	0.2		RTNA	83DAN 01
9.5	0.3	11	HAA	81RAP 01
9.5	0.5		HAA	85NAR 01
9.5	0.5		RTNA	80SLO 01
9.5	0.76		RTNA	79HEI 04
9.5	0.8		RTNA	79ROS 02
9.58	2.25		ITNA	85MAD 01
9.6			FAA	82HEI 01
9.6	0.3	11	HAA	81RAP 01
9.6	0.4		HAA	85YAM 01
9.6	0.5		AA	83RAP 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
As (ug/g) cont.				
9.68	0.14		NAA	74HEY 01
9.7		11	HAA	82CRO 03
9.7	0.12		RTNA	72BYR 01
9.7	0.2		RTNA	73DAM 01
9.7	0.2		HAA	83MAH 01
9.7	0.3		RTNA	79KAN 02
9.7	0.3		HAA	83MAH 04
9.7	0.4	7	RTNA	80GAL 02
9.7	0.4	7	RTNA	77GIL 03
9.7	0.4		RTNA	78GAL 01
9.7	0.4		ITNA	75RIC 01
9.76	0.17		RTNA	79HOE 01
9.8			HAA	84IKE 01
9.8	0.1		HAA	81KNA 01
9.8	0.1	11	HAA	81RAP 01
9.8	0.3		RTNA	82COR 01
9.8	0.4	H	ICPES	81PIC 01
9.8	0.9		COLOR	76VIJ 02
9.8	0.9		ESCA	78CAR 01
9.8	3.2		XRF	78STA 02
9.85			HAA	84YAM 01
9.9			FAA	83XIA 01
9.9	0.1		IENA	78WAN 01
9.9	1.3		RTNA	85GAU 04
9.9	1.6		ICPES	85LIE 02
9.93	0.13		ITNA	73DAM 01
9.98	0.31		HAA	80TAM 01
10			RTNA	79BYR 01
10		11	HAA	82CRO 03
10			HAA	79PEA 01
10			RTNA	72MOR 03
10.0	0.1	6	HAA	81KAH 01
10.0	0.1		VV	81NON 01
10.0	0.1		ICPES	84LIV 01
10.0	0.1		FAA	79PET 01
10.0	0.4		RTNA	78GIL 01
10	1	6	ICPES	85ABD 01
10	1		EXRF	80DYC 01
10	2		COLOR	79MCQ 01
10	2		MPOES	83SAR 01
10	2		ITNA	77MIN 01
10	14	RD	ITNA	79IMA 03
10	14	R	ITNA	79IMA 01
10.1			ITNA	80CRE 01
10.1	0.2	19	ITNA	74RAN 02
10.1	0.3	7	RTNA	77GIL 03
10.1	0.3		RTNA	78WEE 01
10.1	0.3		ITNA	80GAL 02
10.1	0.4		IENA	81KOS 01
10.1	0.8		EXRF	79GIA 01

Conc	Uncer	Com	Method	Reference
As (ug/g) cont.				
10.14			ASV	78DAV 01
10.2		35	XRF	77TAM 01
10.2			HAA	80HON 01
10.2	0.2		RTNA	85TIA 01
10.2	0.2		HAA	77SMI 01
10.2	0.2		COLOR	77BUR 01
10.2	0.5	7	RTNA	80GAL 02
10.2	1		PAA	74CHA 01
10.2	1		NAA	77JER 01
10.3			HAA	81ARA 01
10.3			FAA	82PER 02
10.3	0.2		HAA	80AGE 02
10.3	0.2	34	HAA	78FLA 01
10.3	0.4	7	RTNA	77GIL 03
10.3	0.4	7	RTNA	80GAL 02
10.3	0.9		ITNA	81KOS 01
10.3	1.6		RTNA	79REN 01
10.4	0.4		ITNA	78LAU 02
10.43	0.22		HAA	81UTH 01
10.5			ITNA	82AKA 01
10.5		1	IENA	79KUC 01
10.5			HAA	83KUM 01
10.5	0.6		HAA	85NAR 03
10.5	1		PAA	76KAT 04
10.6			ASV	81LEE 01
10.6	0.3		14NAA	81WIL 01
10.6	0.5		14NAA	81WIL 02
10.6	0.6	6	HAA	81KAH 01
10.6	0.8		EXRF	73GIA 01
10.6	0.8		RTNA	74ORV 01
10.7	0.4		FAA	78HAY 01
10.7	1	6	ITNA	74BEC 01
10.8		6	NAA	78GAN 01
10.8			FAA	78CAP 01
10.8			HAA	81BRO 01
10.8			IENA	84GLA 02
10.8	0.5		IENA	82GLA 02
10.8	0.9		RTNA	76MEL 01
10.82	0.25		HAA	77YAS 02
11			ICPES	79MCQ 01
11			ICPES	79MCQ 02
11			ICPMS	83DOU 02
11.0	0.6		PAA	78HIS 01
11	1		PAA	76KAT 02
11	1		HAA	76FIO 01
11.0	1.5	7	RTNA	80GAL 02
11	2		RTNA	77KUS 01
11	2		ITNA	85WAH 01
11.0	2.9		ITNA	84TU 01
11	3		ITNA	77ZIK 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
As (ug/g) cont.				
11.5		11	SSMS	85VOS 01
11.5	0.3		GCMES	75TAL 01
11.5	0.47		HAA	81YAN 01
11.5	0.5		HAA	81YAN 01
11.5	1.5		RTNA	73GOE 01
11.5	1.5	D	RTNA	74GOE 01
11.6			HAA	77SIE 01
11.6	0.27	H	HAA	76SIE 01
11.6	1.3		ITNA	74NAD 02
11.6	1.8		RTNA	79NIC 01
11.7			NM	83MAR 03
11.8	0.8		SSMS	77DON 01
11.9		H	FAE	79FEL 01
11.9	0.1		FAA	80DUP 01
11.9	0.2		ITNA	81HAB 01
11.9	0.6		ICPES	83OLI 01
11.98	0.08	H	ICPES	81PAH 01
12			ICPES	84MAR 01
12			RTNA	74ERD 01
12	0.38		HAA	82TAM 01
12	0.6		AE+AF	82MAT 01
12	0.6	11	HAA	82JON 01
12	1		ITNA	76KUC 01
12	1.5		RTNA	83BRA 01
12	2		HAA	79STO 01
12	2.5		ITNA	77HAM 01
12	2.6		EXRF	75REU 01
12	3		ITNA	81KUL 01
12.15	0.43		NAA	76GUZ 01
12.2	0.3		AA	84MAT 01
12.3	0.2		ITNA	79KOB 03
12.3	0.4		RTNA	73TJI 01
12.4	1		ITNA	85NDI 01
12.5		11	SSMS	85VOS 01
12.7	0.7		ITNA	79JER 01
12.7	2		ITNA	82QUR 01
12.9	0.4	11	HAA	82JON 01
12.9	2.3		SSMS	84VOS 01
13	0.1		ITNA	75BOL 01
13	1	H	ICPES	82HAH 01
13	2.4		SSMS	84VOS 01
13	3		CPAA	77ZIK 01
13.2			CPXRF	75CAM 01
13.3			ICPES	85NAR 02
13.3	0.4		HAA	76WAU 01
13.4	0.93		COLOR	73LEB 01
13.5			HAA	76AGG 01
13.7			CPXRF	84KAU 01
14	1		ITNA	78FUR 01
14.1		6	NAA	78GAN 01
14.1	1.5		NAA	84VOS 01
14.3			XRF	78CAM 02
14.3	0.4		EXRF	77NIE 01
14.7	2		ITNA	83AHM 01
15	0.1		RTNA	77BAN 03
15.3	0.5		EXRF	73SPA 01
15.3	1.6		SSMS	84VOS 01
15.3	2		ITNA	79AHM 01
15.4	0.2	19	ITNA	74RAN 02
15.7	5		CPXRF	85CLA 01
16			AA	79HIL 01
16	2		CPXRF	77CAM 01
17			CPXRF	76ZEI 01
17			CPAA	78MCG 01
19		6	ICPES	85ABD 01
26			AF	85NAR 02
38			EXRF	81PAR 01
AS(III) (ug/g)				
4.9			HAA	76AGG 01
Au (ng/g)				
0.72	0.25		RTNA	84TJI 01
0.78	0.15		ITNA	79REN 03
0.97	0.09		RTNA	77NAD 01
1			RTNA	72MOR 03
1	0.5		ITNA	82QUR 01
1.2		1	IENA	79KUC 01
1.4			ITNA	81KUL 01
1.4	0.3		ITNA	85MAD 01
1.4	0.5		IENA	81KOS 01
1.43	0.08		RTNA	82ZEI 01
1.5			ITNA	79KUC 01
1.5	0.5		RTNA	77KUS 01
1.5	4	R*	RTNA	80SLO 01
1.6	0.2		RTNA	83SIR 01
1.64	0.1		ITNA	77MIN 01
1.8		1	IENA	79KUC 01
1.8	0.3		ITNA	81HAB 01
2	0.8		ITNA	81KOS 01
3.5	0.6		RTNA	74CAR 03
4.2			FAA	85BRO 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
B (ug/g)				
16	12		ITNA	82SCH 05
22.55		6	AE+AF	74DAU 01
23			OES	75JON 10
24	2		ICPES	79HER 01
25.15		6	AE+AF	74DAU 01
27			OES	75JON 05
27			OES	75JON 02
30			OES	75JON 01
31	3		ICPES	84PRI 01
31.2	2.8		NM	79YAN 01
31.5			ICPES	81GOO 01
31.7			TCGS	84HIG 01
31.9	4.7	14	FAA	79SZY 01
32			OES	75JON 04
32			OES	75JON 09
32	4		ICPES	79ABE 01
32.2	0.4		TCGS	79AND 01
32.5	0.5		COLOR	79YAN 01
32.8	2.3	6	TCGS	76GLA 01
33			OES	75JON 07
33			OES	75JON 06
33	2	11	ICPES	79MIZ 01
33	4		CPAA	80HAN 01
33.2	0.1		TCGS	79FAI 01
33.3		11	COLOR	85SHI 02
33.3	2.3	6	TCGS	76GLA 01
33.4		11	COLOR	85SHI 02
33.4	0.7		ICPES	81KNA 01
33.5	2.8	11	ICPES	81MUN 01
34	1	11	ICPES	79MIZ 01
34.8	0.9	11	ICPES	81MUN 01
35.1	9.9	14	FAA	79SZY 01
36			CPAA	81SAS 02
36			OES	75JON 03
36	3		CPAA	81SAS 01
36	5		CPAA	75MCG 01
37	3		ICPES	84SOB 01
38			OES	75JON 11
38			OES	75JON 08
40	1	11	ICPES	79MIZ 01
Ba (ug/g)				
0.3	0.1		CPXRF	77RIN 01
14.7			SSMS	81VER 02
25.9	6.8		ITNA	81HAB 01
28			ITNA	80CRE 01
30			NAA	74BEL 01
35		11	SSMS	85VOS 01
35.9	7		CPXRF	85CLA 01

Conc	Uncer	Com	Method	Reference
Ba (ug/g) cont.				
37		6	ICPES	83BRA 02
37	11	5	ITNA	80TOU 01
37.7		6	ICPES	83BRA 02
37.9		6	ICPES	83BRA 02
37.9		1	IENA	79KUC 01
38			OES	75JON 05
38	4.7		CPXRF	80KIR 01
39.4			ITNA	79KUC 01
40		11	SSMS	85VOS 01
40			OES	75JON 03
40			NAA	77LAU 01
40	3	9	ITNA	78LAU 02
41	1.3		RTNA	77GUI 03
41	4		ITNA	79SAT 01
42	2		ICPES	79MCQ 02
42	2		ICPES	79MCQ 01
42	6		ITNA	78LAU 02
43			OES	75JON 11
43	3		ITNA	85WAH 01
43	5.7		ITNA	77HAM 01
43.9		1	IENA	79KUC 01
44	5		SSMS	84VOS 01
44	57	R	AA	75MAN 01
44.3			AA	74BUS 02
44.8	2.5		IENA	81KOS 01
45			ITNA	78CAP 01
45			OES	75JON 04
45	1		ICPES	85LIE 02
45	6		VV	81NON 01
45	7		SSMS	84VOS 01
45.3	2.7		ITNA	81KOS 01
45.6	2.43		ITNA	85MAD 01
45.7			ICPES	84NAD 01
46		6	ICPES	83CHA 01
46	6		ITNA	74RAN 02
47	3		ITNA	81KUL 01
47.3	2.7		ITNA	84TU 01
48		6	ICPES	83CHA 01
48	8		SSMS	84VOS 01
50	14		FAA	86GAU 01
51			RTNA	72MOR 03
51.3	4.5		PAA	74CHA 01
51.9			ICPES	78DAH 01
52			OES	75JON 01
52	8		SSMS	84VOS 01
59.54	1.81		ITNA	79REN 03
62	21		ITNA	77ZIK 01
80	22		14NAA	81WIL 02

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
Be (ng/g)				
13.7	1.8	6	ICPES	82SCH 01
14.8	1.6	6	ICPES	82SCH 01
19	4		ICPES	85LIE 02
26	1		FLUOR	77WIC 01
26	3		FAA	86GAU 01
30	4		VV	74FLO 01
36	4	11	FAA	75OWE 01
67	7	11	FAA	75OWE 01
110	10		GC	73BLA 01
Bi (ng/g)				
4	1	H	ICPES	81PAH 01
30			FAA	77BRU 01
39			FAA	79INU 01
64			FAA	82HEI 01
100		11	SSMS	85VOS 01
100	10		HAA	85YAM 01
110	20		POL	72MAI 01
110	20		POL	77MAI 01
110	100		POL	74MAI 01
160			AF	85NAR 02
Br (ug/g)				
5	5		ITNA	77ZIK 01
6.3	2		EXRF	77FLO 01
6.6	0.4		EXRF	73SPA 01
6.6	0.4	5	IENA	79GLA 02
7.1			EXRF	81BIS 01
7.3	3.2		CPXRF	80KIR 01
7.3	9.3	R	ITNA	79IMA 01
7.3	9.3	RD	ITNA	79IMA 03
7.4	0.2		ITNA	75RIC 01
7.8	0.3		EXRF	80DYC 01
8.2			RTNA	72MOR 03
8.2	0.6		ITNA	80SLO 01
8.3	0.5	5	ITNA	80HOE 01
8.48	0.07	5	ITNA	80HOE 01
8.5	0.5	6	ITNA	74BEC 01
8.6			ITNA	85MIS 01
8.7			ITNA	84GLA 02
8.8	0.6	5	IENA	79GLA 02
8.8	1.6		EXRF	75REU 01
8.87			CPXRF	84KAU 01
9.0	0.5		EXRF	79GIA 01
9.0	0.5		ITNA	78LAU 02
9.0	0.62		ITNA	84NDI 01
9.1	0.5		ITNA	78WEE 01
9.19	1.39		ITNA	79REN 03
Br (ug/g) cont.				
9.2			ITNA	80CRE 01
9.2	0.2		ITNA	74RAN 02
9.3	0.6		EXRF	73GIA 01
9.3	1.4		RTNA	78WEE 01
9.4			ITNA	79KUC 01
9.5		1	IENA	79KUC 01
9.5		1	IENA	79KUC 01
9.5			XRF	78CAM 02
9.5	0.8		RTNA	76MEL 03
9.5	1		EXRF	77NIE 01
9.6	1.2	6	NAA	78GAN 01
9.6	2.8		ITNA	77HAM 01
9.7	1.1		ITNA	78GIL 01
9.8	0.78		ITNA	77STE 02
9.8	0.8		RTNA	79CRO 01
9.8	1.1		CPXRF	85CLA 01
9.9	0.2		IENA	81KOS 01
10	1		ITNA	76KUC 01
10	2.1		VV	81NON 01
10	2.2		XRF	78STA 02
10.1	0.8		ITNA	77GUI 02
10.2	1		ITNA	81KUL 01
10.5	0.6		ITNA	81KOS 01
10.5	1.4		ITNA	79CRO 01
10.6	1.5		ITNA	84TU 01
10.8	0.4	35	NAA	81GLA 03
10.8	0.9	6	NAA	78GAN 01
10.9			ITNA	80SAT 01
11			ITNA	78CAP 01
11	0.7	5	ITNA	80TOU 01
11	1.2		ITNA	79KOB 03
11.5	1.5		ITNA	85WAH 01
12	1.3		ITNA	79AHM 01
12	3		ITNA	77ZIK 01
12.1	1.3		ITNA	83AHM 01
12.5			ITNA	82AKA 01
34			EXRF	81PAR 01
C (%)				
45.6	1.2		COUL	86CAH 01
45.76	0.51		CB	82GLA 02
45.8	1.3	35	CB	79GLA 04
46	2		TCGS	79FAI 01
46.35	0.31		CB	80SCH 02
47	5	35	TCGS	79GLA 04
52	5		TCGS	79AND 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
Ca (%)				
0.9		11	SSMS	85VOS 01
1.58		35	AA	81GLA 04
1.6	2.26	R	ITNA	79IMA 01
1.6	2.26	RD	ITNA	79IMA 03
1.63			OES	75JON 07
1.69			AF	85DAV 01
1.69	0.05		CPXRF	85CLA 01
1.74			CPXRF	84KAU 01
1.74			OES	75JON 05
1.8			NAA	77LAU 01
1.8			OES	75JON 02
1.81			ITNA	82AKA 01
1.81	0.24	5	ITNA	80TOU 01
1.83	0.07		CPXRF	80KIR 01
1.86	0.1		14NAA	77VAN 01
1.89		6	ICPES	83BRA 02
1.90	0.11		ITNA	79REN 03
1.91			AA	77BRU 01
1.91			OES	75JON 10
1.92			EXRF	81BIS 01
1.93	0.07		EXRF	79KUE 01
1.93	0.09		ITNA	77ZIK 01
1.94			OES	75JON 04
1.96	0.002	11	AA	75ISA 01
1.96	0.06		FE	78KOR 01
1.97		6	ICPES	83BRA 02
1.97	0.03	11	ICPES	82JON 01
1.97	0.05		PAA	76KAT 02
1.97	0.055		PAA	76KAT 04
1.97	0.08		TCGS	79AND 01
1.97	0.15		14NAA	81WIL 02
1.98	0.02		ICPES	85LIE 02
1.98	0.04	11	ICPES	82JON 01
1.98	0.05		ICPES	79MCQ 02
1.98	0.07		ICPES	79MCQ 01
1.98	0.08		EXRF	75REU 01
1.99			XRF	78CAM 02
1.99	0.06		EXRF	77NIE 01
2.00			OES	75ISA 01
2.00	0.08		ITNA	80SLO 01
2.00	0.19		ICPES	85LYO 01
2.01	0.02		AA	79MCQ 01
2.01	0.18		RTNA	80CAN 01
2.02	0.002	11	AA	75ISA 01
2.02	0.11		EXRF	82DAK 01
2.03			COLOR	84OGU 01
2.03			ICPES	78DAH 01
2.03	0.02	11	ICPES	82JON 01
2.03	0.04	11	ICPES	82JON 01
2.04	0.06		CPAA	77ZIK 01
2.04			OES	75JON 03
2.04			AA	80URE 01
2.04	0.02	11	AA	78GAI 01
2.05		6	ICPES	83CHA 01
2.05	0.9		XRF	78STA 02
2.06			COLOR	77HAM 04
2.07	0.06		IENA	79JON 01
2.07	0.06	11	ICPES	81MUN 01
2.08			OES	75JON 11
2.08			OES	75JON 09
2.08	0.01		PAA	74CHA 01
2.08	0.02	11	AA	78GAI 01
2.08	0.04		ITNA	79KOB 03
2.08	0.06		ICPES	79ABE 01
2.09	0.04	11	ICPES	81MUN 01
2.1			ICPES	81GOO 01
2.1			ICPES	83KEI 01
2.1			RTNA	72MOR 03
2.1	0.05		ITNA	81KOS 01
2.1	0.08	6	EXRF	79MAT 01
2.1	0.2		14NAA	80FAA 01
2.1	0.2		ITNA	78LAU 02
2.11			ICPES	81WEI 01
2.11			AA	79HIL 01
2.11	0.08	6	EXRF	79MAT 01
2.12	0.07		IENA	81KOS 01
2.13			SSMS	81VER 02
2.13			ITNA	76BAT 01
2.13	0.09		ITNA	75RIC 01
2.13	0.11		TCGS	79FAI 01
2.14		6	ICPES	83CHA 01
2.14	0.02		ITNA	78FUR 01
2.14	0.11		ITNA	84TU 01
2.145	0.017		CPXRF	81ROB 02
2.15			COLOR	80LAU 01
2.15			ITNA	78CAP 01
2.17			OES	75JON 08
2.17	0.03		EXRF	80DYC 01
2.18	0.16		AA	82HAR 01
2.2			EXRF	81OHT 01
2.2	0.02		ICPES	79HER 01
2.2	0.05		PAA	78HIS 01
2.2	0.1		ITNA	81KUL 01
2.21	0.15		ITNA	77HAM 01
2.23	0.12		ITNA	83AHM 01
2.26	0.58		ICPES	84ABD 01
2.28			CPAA	80HAN 01
2.29			OES	75JON 06
2.29	0.04		VV	81NON 01
2.41			OES	75JON 01

Ca (%) cont.

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
Ca (%) cont.				
2.46	0.09	5	ITNA	80TOU 01
2.6			ICPES	84NAD 01
2.63			ICPES	78CAP 01
3.04		11	SSMS	85VOS 01
5.01			EXRF	81PAR 01
Cd (ng/g)				
70			RTNA	80SLO 01
70			FAA	73LOO 01
72	14		FAA	81ZAU 01
90		6	AF	84NAR 02
90			AA	79HIL 01
90	10		FAA	80LEG 01
92	18		RTNA	73TJI 01
95		11	FAA	79HOE 02
100			AA	79NAR 01
100			FAA	80PRE 01
100		11	SSMS	85VOS 01
100		6	AF	84NAR 02
100			AA	73LOO 01
100	4		ASV	82SAT 02
100	10		ASV	85ADE 01
100	10		POL	74MAI 01
100	20		AA	83RAP 01
100	40		HAA	82WEI 01
105			FAA	82HOE 01
105	5		FAA	79STO 01
105	10		FAA	84ROS 01
106	9		FAA	74RAI 02
108	8		AE+AF	74RAI 02
109	2		FAA	79DAB 02
110			AF	85NAR 02
110			FAA	82PRE 01
110			FAA	82AKA 01
110			RTNA	79BYR 01
110	6		AA	80SCH 05
110	10	D	FAA	80SCH 08
110	10		AA	82RIT 01
110	10		FAA	81KNA 01
110	10		ICPES	83SCH 04
110	10		NAA	77JER 01
110	10		PAA	74CHA 01
110	10		AA	78RIT 01
110	10		AF	75EPS 01
110	10		AA	75EPS 01
114	18		FAA	84GLA 11
115	8		AA	84STO 01
116	8	7	RTNA	80GAL 02
116	8		RTNA	78GAL 01

Conc	Uncer	Com	Method	Reference
Cd (ng/g) cont.				
116	10		FAA	84GLA 02
116	13		RTNA	80GRE 01
120			RTNA	85TIA 01
120			AA	84SAT 02
120		11	FAA	79HOE 02
120			RTNA	74ROO 01
120	7		AA	83FAG 01
120	10	11	ASV	84LOC 01
120	10	11	ASV	84LOC 01
120	10		IENA	81KOS 01
120	10		ASV	84LOC 01
120	10		RTNA	83BRA 01
120	10		RTNA	74ORV 01
120	14		NAA	76GUZ 01
120	20	11	FAA	78SMI 01
120	20	11	FAA	78SMI 01
120	30		AA	86GAU 01
120	40	6	AA	84KAN 01
120	50		AA	82ROD 03
120	80	11	ICPES	82JON 01
130			ICPES	84MAR 01
130			ICPES	84OHL 01
130			FAA	82HEI 01
130			ICPES	85NAR 02
130	5		FAA	74TAL 01
130	5	7	AA	73TAL 01
130	7		FAA	74TAL 01
130	7	7	AA	73TAL 01
130	10		ICPES	85KUM 01
130	20		ITNA	81KOS 01
130	160	11	ICPES	81MUN 01
135			FAA	84OHL 01
140			AA	83ELA 01
140	40		FAA	82WEI 01
150	50		AA	80AGE 01
150	50		AA	76GAL 01
150	60		TCGS	79AND 01
160	10		ICPES	79HER 01
160	16		FAA	76URE 01
160	50		RTNA	80VAL 01
160	70	11	ICPES	82JON 01
170			AF	78URE 02
170	70	11	ICPES	82JON 01
180		16	AA	79ABO 01
190	40		FAA	77BRU 01
200	80		RTNA	76GAL 01
200	100	11	ICPES	82JON 01
230	20		FAA	73SEG 01
230	60		ITNA	74RAN 02
260	70	6	AA	84KAN 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
Cd (ng/g) cont.				
260	200		ICPES	85LIE 02
350	20		ICPES	84ABD 01
370	10	6	ICPES	85ABD 01
580		16	AA	79ABO 01
660	340		AA	79MON 01
2000			AE+AF	79ULL 01
Ce (ug/g)				
0.75	0.067		ITNA	77HAM 01
0.82		11	SSMS	85VOS 01
0.84	0.04		ITNA	81KOS 01
0.866	0.059		RTNA	83TJI 01
0.9		D	RTNA	82LAU 01
0.9			RTNA	77LAU 02
0.91	0.06		RTNA	80SLO 01
0.92	0.14		ITNA	77NAD 02
0.949	0.076		RTNA	86TSU 01
0.97			ITNA	79KUC 01
0.98	0.05		ITNA	78LAU 02
0.98	0.07		VV	81NON 01
1			RTNA	72MOR 03
1			NAA	77LAU 01
1.03	0.07		ITNA	84TU 01
1.05	0.33		RTNA	83SIR 01
1.1			SSMS	78URE 01
1.2	0.2		ITNA	81KUL 01
1.25	0.41		ITNA	84ODD 01
1.28	0.18		RTNA	84ODD 01
1.38	0.23		ITNA	85MAD 01
Cl (ug/g)				
53			SSMS	81VER 02
400	770	RD	ITNA	79IMA 03
400	770	R	ITNA	79IMA 01
510		35	ITNA	81GLA 03
580	27		FAA	78TSU 01
630	24		AA	78TSU 01
632	80		ITNA	77ZIK 01
638	27		ISE	81NAD 01
675			ITNA	78CAP 01
685	32		PAA	74CHA 01
687	32		ITNA	83LI 01
690			NAA	76GUZ 01
700	60	35	ITNA	81GLA 04
706	26		ITNA	78FUR 01
715			CPXRF	84KAU 01
717	193		PAA	76KAT 04
719.5			ITNA	82AKA 01
720	15		VV	81NON 01
720	25		ITNA	85WAH 01
720	140		PAA	76KAT 02
730	26		NAA	78GAN 01
730	30		TCGS	79FAI 01
730	60		ITNA	80SLO 01
732	29		ITNA	77GUI 02
732	29		NAA	76MIL 02
739			ITNA	76BAT 01
740	30		TCGS	79AND 01
740	58		ITNA	77HAM 01
750			ITNA	74RAN 02
750	19		ITNA	75RIC 01
750	35		ITNA	77STE 02
755			ITNA	80CRE 01
760			ITNA	84GLA 02
770			XRF	78CAM 02
770	150		CPXRF	79REN 02
770	240		EXRF	77NIE 01
773	108		ITNA	84NDI 01
790			RTNA	72MOR 03
800	40		IENA	79JON 01
810	150		EXRF	80DYC 01
838			ITNA	86GAU 01
950	70		14NAA	81WIL 02
Co (ng/g)				
100			RTNA	72MOR 03
105	2		ASV	85ADE 01
107	3		VOLT	84ADE 02
110	20	6	NAA	78GAN 01
112	17		NAA	76GUZ 01
120	50		AA	76GAL 01
130			ITNA	78CAP 01
130			NAA	77LAU 01
130			ITNA	80CRE 01
130			ITNA	79KUC 01
130	10	D	RTNA	74GOE 01
130	10		ITNA	78LAU 02
130	10		RTNA	73GOE 01
130	20	6	ITNA	74BEC 01
130	20		RTNA	77KUS 01
130	20		RTNA	83SIR 01
138	10		ITNA	74RAN 02
140			NAA	74BEL 01
140	10		ITNA	78GIL 01
140	30	6	NAA	78GAN 01
142	7		FAA	75HAG 01
145			ITNA	82AKA 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
Co (ng/g) cont.				
150			ITNA	80SAT 01
150		1	IENA	79KUC 01
150	20	11	FAA	80FUD 01
150	30		ITNA	76KUC 01
160	10		ITNA	82COR 01
160	20		RTNA	80SLO 01
170	10		ITNA	79KOB 03
170	10		ITNA	79SAT 01
170	10		ITNA	84TU 01
180			ITNA	85MIS 01
180		11	SSMS	85VOS 01
180	20		RTNA	77MEL 01
180	28		ITNA	77HAM 01
180	30		ITNA	81KUL 01
190	5	11	FAA	80FUD 01
190	40		VV	81NON 01
190	100		ICPES	85LIE 02
198	61		ITNA	85MAD 01
200			AA	84SAT 02
210	20		ITNA	81KOS 01
210	20	6	ITNA	74BEC 01
210	30		ITNA	85WAH 01
220	30		ITNA	82QUR 01
220	40		ITNA	78FUR 01
230	30		ITNA	79AHM 01
230	30		ITNA	83AHM 01
230	50		IENA	81KOS 01
260	120	5	ITNA	80TOU 01
290	100		ITNA	77ZIK 01
297	26		COLOR	82KIR 01
300			FAA	82HOE 01
300	40		ITNA	76GAL 01
320		11	SSMS	85VOS 01
420	470		ITNA	75RIC 01
460	100		ITNA	79REN 03
680	80		ICPES	84ABD 01
800	600		XRF	78STA 02
Cr (ug/g)				
1.07	0.13	6	NAA	78GAN 01
1.1	0.2	11	ICPES	81MUN 01
1.5			AA	73LOO 03
1.6	0.2	6	ICPES	85ABD 01
1.9			POL	83HOL 01
1.9	0.3	11	ICPES	81MUN 01
1.9	0.3		ICPES	85LIE 02
1.97	0.44		NAA	76GUZ 01
2.0			NAA	74BEL 01
2.0			ICPES	79MCQ 01

Conc	Uncer	Com	Method	Reference
Cr (ug/g) cont.				
2.0			AA	79MCQ 01
2.0			ICPES	79MCQ 02
2.0	0.13		GC-AA	76WOL 01
2.0	0.2	6	ITNA	74BEC 01
2.05		11	AA	79HOE 02
2.2	0.2		ICPES	84SOB 01
2.2	0.3		RTNA	77MEL 01
2.2	0.4		VV	81NON 01
2.2	1		CPXRF	80KIR 01
2.2	2.9	R	AA	75MAN 01
2.22	0.2		PAA	74CHA 01
2.23		6	NAA	78GAN 01
2.25		11	AA	79HOE 02
2.28		11	SSMS	85VOS 01
2.33			CPXRF	84KAU 01
2.37	0.07		SSMS	72MAG 01
2.4			RTNA	75ABU 01
2.4			ITNA	79KUC 01
2.4			AA	83ELA 01
2.4	0.1		ITNA	85WAH 01
2.4	0.1	11	ICPES	82JON 01
2.4	0.1	9	ITNA	78LAU 02
2.4	0.1		RTNA	76MEL 03
2.4	0.1		CHEML	74LI 01
2.4	0.3		ITNA	78LAU 02
2.4	0.36		ITNA	77HAM 01
2.4	0.6		ICPES	81BLA 02
2.4	1.1		CPXRF	85CLA 01
2.46	0.025		RTNA	74MCC 01
2.463	0.02	11	RTNA	78MCC 01
2.47	0.14		FAA	75CAR 02
2.495	0.014	11	RTNA	78MCC 01
2.5			RTNA	72MOR 03
2.5			ITNA	85MIS 01
2.5		11	SSMS	85VOS 01
2.5	0.4		ITNA	76KUC 01
2.5	1.6		EXRF	73GIA 01
2.56	0.11		FAA	83CAR 02
2.574	0.01		ITNA	78MCC 01
2.58	0.04		ITNA	81KOS 01
2.59	0.15	7	FAA	80CHA 01
2.6		11	AA	79HOE 02
2.6	0.1		ITNA	79KOB 03
2.6	0.1	35	FAA	81GLA 03
2.6	0.2		NM	80SHI 01
2.6	0.2	6	ITNA	74BEC 01
2.6	0.3	11	ICPES	82JON 01
2.6	0.4		ITNA	78FUR 01
2.64	0.2		ITNA	85NDI 01
2.65	0.16	7	FAA	80CHA 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
Cr (ug/g) cont.				
2.67	0.15	7	RTNA	80GAL 02
2.67	0.15		RTNA	78GAL 01
2.7			ITNA	78CAP 01
2.7			AA	81ARA 01
2.7			FAA	82HOE 01
2.7	0.1		ITNA	84TU 01
2.7	0.17		AA	80AGE 01
2.7	0.2		AA	83RAP 01
2.7	0.2		ITNA	79SAT 01
2.7	0.2		DCPES	79REE 01
2.7	0.2	D	DCPES	81REE 01
2.7	0.3		ITNA	82COR 01
2.72	0.15		ITNA	84GIB 01
2.8			SSMS	81VER 02
2.8			NAA	77LAU 01
2.8	0.2		ITNA	75RIC 01
2.8	0.2		ITNA	79AHM 01
2.8	0.2		ICPES	81KNA 01
2.8	0.2		ITNA	82QUR 01
2.8	0.2		ITNA	83AHM 01
2.8	0.4		ICPES	84ABD 01
2.8	0.4		ITNA	74RAN 02
2.8	0.6		FAA	74WOL 01
2.82		7	FAA	80CHA 01
2.9			RTNA	79TJI 01
2.9			RTNA	78GOE 01
2.9	0.3	D	RTNA	74GOE 01
2.9	0.3		RTNA	73GOE 01
2.9	0.4		EXRF	80DYC 01
2.9	0.4		SSMS	84VOS 01
2.92	0.28		ITNA	85MAD 01
3.0			ICPES	81GOO 01
3.0	0.2		AA	76GAL 01
3.0	0.3		SSMS	84VOS 01
3.0	1		ITNA	77ZIK 01
3.1		6	ICPMS	83DOU 01
3.14	0.4		ITNA	81HAB 01
3.2	0.3		SSMS	84VOS 01
3.2	0.3		ITNA	81KUL 01
3.2	0.3		RTNA	76GAL 01
3.3			ITNA	80CRE 01
3.4		6	ICPMS	83DOU 01
3.4	0.5		SSMS	84VOS 01
3.4	0.5		ITNA	76GAL 01
3.67	0.01		ICPES	79HER 01
3.9	15		XRF	78STA 02
5.5	2.2		PAA	80YAM 01
5.81	0.84		ITNA	79REN 03

Conc	Uncer	Com	Method	Reference
Cs (ng/g)				
20			NAA	77LAU 01
24	3	9	ITNA	78LAU 02
28	5		ITNA	78LAU 02
28	5		ITNA	81KUL 01
29	2		ITNA	74RAN 02
32	8		ITNA	84TU 01
36	6		ITNA	84GLA 11
37	2		ITNA	84GLA 02
37.4	11		NAA	76GUZ 01
38	7	6	ITNA	74BEC 01
40		11	SSMS	85VOS 01
40	9		VV	81NON 01
40	10		ITNA	79SAT 01
42			ITNA	80CRE 01
42	1		IENA	81KOS 01
44	2		ITNA	85GAU 04
48	4		ITNA	81KOS 01
49	9		ITNA	85MAD 01
50	6		ITNA	83AHM 01
50	10		ITNA	85WAH 01
80	10		RTNA	77MEL 01
150	60		ITNA	79REN 03
300	50	7	RTNA	80GAL 02
Cu (ug/g)				
3.6	1.3	6	ITNA	74HOF 01
8			EXRF	82KEE 01
8.1	2		EXRF	77FLO 01
8.4	0.8		ITNA	78FUR 01
8.9	1.7		FAA	77FUJ 01
9.4			EXRF	81BIS 01
9.5			ICPES	81GOO 01
9.6	0.8		XRF	85AVA 01
9.6	1.7		EXRF	73SPA 01
9.7		11	SSMS	85VOS 01
9.76	0.61	9	ITNA	77GAN 03
9.8	0.6	6	NAA	78GAN 01
9.8	0.6	6	NAA	78GAN 01
10			RTNA	72MOR 03
10	0.7		AA	78LIN 01
10	1		XRF	78LIN 01
10	2		CPXRF	77CAM 01
10	2		AA	82HAR 01
10.1	1.2		RTNA	83DAN 01
10.3			AA	76KRI 03
10.3	0.5		FAA	82JEN 02
10.3	0.6		AA	76GAL 01
10.4	2.4		EXRF	75REU 01
10.4	13.3	RD	ITNA	79IMA 03

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
Cu (ug/g) cont.				
10.4	13.3	R	ITNA	79IMA 01
10.5	1		RTNA	80SLO 01
10.6	8		SSMS	84VOS 01
10.7	0.3	11	ICPES	81MUN 01
10.7	0.9		ITNA	85NDI 01
10.8		6	NAA	72SIN 01
10.8	0.8		SSMS	84VOS 01
11			AA	84SAT 02
11			ICPES	81WEI 01
11			FAA	83ATS 01
11			AE+AF	79ULL 01
11		1	AA	77FRY 01
11			OES	75JON 10
11	0.1		ICPES	83SCH 04
11	0.8	7	RTNA	80GAL 02
11	1		ICPES	84SOB 01
11	1		FAA	79KRA 01
11	1		ICPES	79MCQ 02
11	1		RTNA	77KUS 01
11	1.5		AA	79MON 01
11	15	R	AA	75MAN 01
11.1	1		RTNA	82COR 01
11.2			VV	81NON 01
11.2		6	ICPES	83BRA 02
11.2	0.18		AA	80AGE 01
11.2	1	6	POL	72SIN 01
11.2	1.3		ITNA	74RAN 02
11.3		16	AA	79ABO 01
11.3			ICPMS	85SCI 01
11.3	1		SSMS	84VOS 01
11.3	2.3		XRF	78STA 02
11.4			ICPES	78CAP 01
11.43	0.2		RTNA	74RAV 01
11.5	0.5		RTNA	73TJI 01
11.5	0.6		FAA	84GLA 02
11.5	1		POL	74MAI 01
11.5	1		EXRF	79GIA 01
11.6			FAA	78CAP 01
11.6	0.2		AA	75ABU 01
11.6	0.4		RTNA	78GAL 01
11.6	0.4		ICPES	81BLA 02
11.6	0.4	7	RTNA	80GAL 02
11.6	0.6	11	ICPES	81MUN 01
11.7	0.2	11	ICPES	82JON 01
11.7	0.4		AA	83RAP 01
11.7	1.7		CPXRF	81ROB 02
11.8		6	ICPMS	83DOU 01
11.8			RTNA	79BYR 01
11.8	0.3		RTNA	78GIL 01
11.8	0.3	7	RTNA	80GAL 02

Conc	Uncer	Com	Method	Reference
Cu (ug/g) cont.				
11.8	0.4		RTNA	85TIA 01
11.8	0.7		ITNA	79KOB 03
11.9		11	SSMS	85VOS 01
11.9	0.6		HPLC	83ICH 01
11.9	1.4		FAA	82GRO 01
11.9	1.6		ASV	79BRI 02
12			AA	73LOO 03
12			AA	76FUK 01
12			XRF	78CAM 02
12			FAA	73SEG 01
12			AA	79HIL 01
12			CPAA	78MCG 01
12			OES	75JON 02
12			CPXRF	76ZEI 01
12			AA	81ARA 01
12			ASV	83HOL 01
12	0.2	11	ICPES	82JON 01
12	0.3	6	ICPES	85ABD 01
12	0.4		ICPES	80SCH 08
12	0.4	11	ICPES	82JON 01
12	0.5		AA	73TAL 01
12	0.8	11	ICPES	82JON 01
12	1		AA	79MCQ 01
12	1		ICPES	79MCQ 01
12	1		AA	77YAN 01
12	1		AA	78RIT 01
12	1		RTNA	73GOE 01
12	1	D	RTNA	74GOE 01
12	1.4		EXRF	77NIE 01
12	2		FAA	77LOR 01
12	2		RTNA	74CAR 03
12.1		16	AA	79ABO 01
12.1		6	ICPES	83BRA 02
12.1	0.2		ICPES	81KNA 01
12.1	0.7		SSMS	84VOS 01
12.1	0.9		ITNA	79SAT 01
12.1	1.3		PAA	76WIL 01
12.2	1.1		ICPES	79ABE 01
12.3	0.4		ICPES	85LIE 02
12.3	0.9		RTNA	76MEL 03
12.3	1.4		VV	80SCH 05
12.4	1.4		CPXRF	85CLA 01
12.4	1.4	11	ASV	84LOC 01
12.4	1.6		RTNA	80VAL 01
12.4	1.9		RTNA	83SIR 01
12.5		11	AA	79HOE 02
12.5	0.5	11	ASV	84LOC 01
12.5	0.7		FAA	74WOL 01
12.5	0.8		VV	79STO 01
12.5	1.5		FAA	84ROS 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
Cu (ug/g) cont.				
12.6		6	ICPMS	83DOU 01
12.6	0.6		EXRF	73GIA 01
12.6	0.7		ASV	84LOC 01
12.62	0.85		NAA	76GUZ 01
12.7		6	POL	72SIN 01
12.9		6	AA	72SIN 01
13			OES	75JON 07
13		11	AA	79HOE 02
13		1	AA	77FRY 01
13			ICPES	78DAH 01
13			AA	83ELA 01
13	0.1		EXRF	85COE 02
13	0.47	11	AA	75ISA 01
13	1	35	RTNA	77GLA 01
13	1.7		AA	84KAN 01
13	4.2		CPXRF	80KIR 01
13.1		6	ICPMS	83DOU 01
13.1	0.4		ASV	85ADE 01
13.1	0.6		AA	73THO 01
13.2	0.5		SSMS	72MAG 01
13.3	0.1		ICPES	79HER 01
13.4		6	ICPES	83BRA 02
13.4	0.5	7	RTNA	84FAR 02
13.5	0.6	7	RTNA	84FAR 02
13.5	1.5		ITNA	82QUR 01
13.5	1.5		ITNA	79AHM 01
13.6	0.5	7	RTNA	84FAR 02
13.7	1.3	6	EXRF	79MAT 01
13.8	1.4		XRF	74REU 01
14			OES	75JON 03
14			OES	75JON 04
14			OES	75JON 11
14			CPXRF	84KAU 01
14		6	ICPES	85ABD 01
14	0.13	11	AA	75ISA 01
14	1		EXRF	80DYC 01
14	2		ITNA	77ZIK 01
14	4.5	6	ITNA	74HOF 01
14.5	1		FAA	82KRI 01
14.5	4.7		ITNA	77HAM 01
15			OES	75JON 05
15			OES	75ISA 01
15.5			ITNA	82AKA 01
15.5			SSMS	81VER 02
16			ICPES	84NAD 01
16			OES	75JON 09
16			OES	75JON 01
16	1		ICPES	84ABD 01
17			OES	75JON 06
18	4		ICPES	82AZI 02
18.1			CPXRF	75CAM 01
18.3	6.9		XRF	77SMI 04
19			ITNA	78KEL 02
20			OES	75JON 08
21	11		CPAA	77ZIK 01
27			OES	75BOL 02
30			XRF	80SUZ 02
35			EXRF	81PAR 01
Dy (ng/g)				
<	100	L	NAA	77LAU 01
53	8		ITNA	77NAD 02
80	7		RTNA	84ODD 01
86	3		RTNA	86TSU 01
110			SSMS	78URE 01
Er (ng/g)				
<	100		RTNA	77LAU 02
<	100	D	RTNA	82LAU 01
28	3		RTNA	86TSU 01
30			SSMS	78URE 01
31	4		RTNA	84ODD 01
Eu (ng/g)				
20			ITNA	80CRE 01
20			SSMS	78URE 01
20	2		ITNA	78LAU 02
21			RTNA	77LAU 02
21		D	RTNA	82LAU 01
21	1		ITNA	74RAN 02
22	3		ITNA	79KOB 03
22	8		RTNA	80SLO 01
22.6	2.9		ITNA	85MAD 01
23	1		RTNA	83TJI 01
24	4		ITNA	77NAD 02
25	3		ITNA	83AHM 01
26			NAA	77LAU 01
26	1		IENA	81KOS 01
26	5		ITNA	84TU 01
27	3		ITNA	81KOS 01
27	6		ITNA	81KUL 01
28	1		RTNA	86TSU 01
28	6.3		ITNA	77HAM 01
30	10		RTNA	83SIR 01
31	4	6	ITNA	74BEC 01
35			ITNA	85MIS 01
91	5		RTNA	84ODD 01
120	20		RTNA	77KUS 01
300			RTNA	72MOR 03

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
F (ug/g)				
3.12			COLOR	79DAB 01
3.6			AA	77TSU 01
3.69			COLOR	79DAB 01
3.7			DISE	83ESA 01
3.8	0.32		ISE	79DAB 01
3.88			ISE	79DAB 01
4	0.3		ISE	82GLA 02
4.2	0.4		ISE	84GLA 02
4.4	0.3		ISE	83KNA 01
4.8	1		MS	77STE 02
10			CPAA	80HAN 01
Fe (ug/g)				
121			CPXRF	76ZEI 01
121			CPAA	78MCG 01
145	4	11	AA	78GAI 01
151			OES	75JON 09
174			OES	75JON 06
183	22	11	ICPES	81MUN 01
190			OES	75JON 02
190			OES	75JON 11
205	37		ITNA	81HAB 01
213		6	ICPES	83BRA 02
213			OES	75JON 03
220	6	11	AA	78GAI 01
225	58		XRF	77SMI 04
229			OES	75JON 08
229	22		XRF	78LIN 01
232			OES	75JON 04
235			AA	76FUK 01
235			ICPES	78CAP 01
237	13		CHEML	72SEI 01
238			AA	76KRI 03
239			OES	75ISA 01
240	24		SSMS	84VOS 01
240	330	R	AA	75MAN 01
245	35		ICPES	79ABE 01
246			FAA	78CAP 01
250			AA	73LOO 03
250		11	SSMS	85VOS 01
250	30		RTNA	74CAR 03
250	42.5	11	AA	75ISA 01
253			ITNA	80SAT 01
254	9		EXRF	80DYC 01
255	5	11	COLOR	82SCH 03
256	1		AA	78LIN 01
256	11	11	ICPES	82JON 01
258			ICPES	84NAD 01
259			ITNA	78CAP 01
Fe (ug/g) cont.				
260	20		ITNA	78GIL 01
260	20		SSMS	84VOS 01
261			SSMS	81VER 02
261	39.1	11	AA	75ISA 01
262	5		ICPES	79HER 01
265	54		RTNA	83SIR 01
266	21		CPXRF	85CLA 01
267			ICPES	78DAH 01
267	2.9		CPXRF	81ROB 02
267	6		ICPES	79MCQ 02
270			OES	75BOL 02
270		11	SSMS	85VOS 01
270			ITNA	80CRE 01
270	50	35	ITNA	81GLA 03
271	6	11	COLOR	82SCH 03
271	7		RTNA	77MEL 01
272	16		AA	73THO 01
273	6		ICPES	79MCQ 01
274	19		EXRF	79GIA 01
276			OES	75JON 05
276	8		EXRF	73GIA 01
277	4		ICPES	85LIE 02
278	11		AA	79MCQ 01
279	79		RTNA	77KUS 01
280			NAA	77LAU 01
280			AA	83ELA 01
280	10		ITNA	78LAU 02
280	26		ITNA	77HAM 01
280	37		ICPES	84ABD 01
282			COLOR	72SEI 01
282	21		14NAA	81WIL 02
282.3	9.4	11	ASV	84LOC 01
283	3	11	ICPES	82JON 01
283	23		ITNA	75RIC 01
284			AA	82WIL 04
285	5		RTNA	80SLO 01
285	5		ITNA	79DAS 01
285	9	11	COLOR	82SCH 03
287			AA	79HIL 01
288	20		ICPES	80SCH 05
288	20	D	ICPES	80SCH 08
288.1	7.2	11	ASV	84LOC 01
290			FAA	73SEG 01
290			RTNA	72MOR 03
290	2		AA	84SAT 02
290	6	11	ICPES	82JON 01
290	12		PAA	74CHA 01
290	15	7	RTNA	80GAL 02
290	25	6	NAA	78GAN 01
290	30		CPAA	77ZIK 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
Fe (ug/g) cont.				
290	30		ITNA	81KUL 01
290	30		ITNA	81KOS 01
290	35		IENA	81KOS 01
290	58		SSMS	84VOS 01
291	19		EXRF	85COE 02
291	24		VV	81NON 01
292		6	ICPES	83BRA 02
292	10		AA	83RAP 01
293		6	ICPES	85ABD 01
293		11	AA	79HOE 02
293	14		EXRF	77FLO 01
293	18		EXRF	79KUE 01
294			OES	75JON 10
295		11	AA	79HOE 02
295	14	11	ICPES	81MUN 01
295.7	20.1		ITNA	82COR 01
296			ICPES	83KEI 01
296	8		ITNA	82QUR 01
296	8		ITNA	79AHM 01
296	12		ICPES	81BLA 02
297			AA	81ARA 01
297	6		ITNA	85WAH 01
297	10		FAA	82JEN 02
298	8		ITNA	83AHM 01
298	30		ICPES	85LYO 01
298.9	8.1		ASV	84LOC 01
299	1		ITNA	79KOB 03
300			NAA	74BEL 01
300			EXRF	81BIS 01
300	14		COLOR	82MOR 01
300	17	11	ICPES	82JON 01
300	23		ITNA	84TU 01
300	40		ITNA	76KUC 01
300	45		ITNA	74RAN 02
300	50		14NAA	80FAA 01
301	2.5		EXRF	73SPA 01
301	8		ICPES	84SOB 01
303	32		ITNA	79SAT 01
304	30		ITNA	78FUR 01
306			ITNA	79KUC 01
306	6		EXRF	77NIE 01
309	17		ITNA	85MAD 01
310			ITNA	85MIS 01
310			XRF	78CAM 02
310	31		SSMS	84VOS 01
310	54		FAA	77FUJ 01
311.1	10.4		NAA	76GUZ 01
312	11		POL	74MAI 01
312	11.4		POL	72MAI 01
312	11.4		POL	77MAI 01
Fe (ug/g) cont.				
313			ICPES	81WEI 01
313		6	ICPES	83BRA 02
314	40		EXRF	75REU 01
315	25		RTNA	73GOE 01
315	25	D	RTNA	74GOE 01
316			OES	75JON 01
316			CPXRF	84KAU 01
317	25		ICPES	81KNA 01
318.4	26.9	6	ITNA	74BEC 01
319	32		XRF	74REU 01
320	25	6	NAA	78GAN 01
325			ICPES	81GOO 01
326			EXRF	82KEE 01
326	30		ITNA	77ZIK 01
331.5	118		PAA	76KAT 04
332	84		PAA	76KAT 02
335			EXRF	81OHT 01
335	14	6	EXRF	79MAT 01
335	40		ITNA	84NDI 01
338	16	6	EXRF	79MAT 01
340	28		AA	82HAR 01
343	6		SSMS	72MAG 01
348	10		14NAA	81WIL 01
367			OES	75JON 07
370	45		CPXRF	77CAM 01
422			CPXRF	75CAM 01
450	70		ITNA	79REN 03
500			AE+AF	79ULL 01
884			EXRF	81PAR 01
Ga (ng/g)				
<	160	L	IENA	78WAN 01
<	500	L	EXRF	79GIA 01
78	25		NAA	76GUZ 01
86			RTNA	72MOR 03
89.3	3.6		RTNA	80STU 01
100	10		RTNA	77KUS 01
Gd (ng/g)				
1.64	0.24		ITNA	77NAD 02
12	1		RTNA	84ODD 01
81	10		RTNA	86TSU 01
100		D	RTNA	82LAU 01
100			RTNA	77LAU 02
100			SSMS	78URE 01
111	38		RTNA	83TJI 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
Ge (ng/g)				
<	400	L	EXRF	79GIA 01
150		H	ICPES	82HAH 01
H (%)				
5.54	0.08		TCGS	79FAI 01
5.6	0.1		TCGS	79AND 01
5.91	0.3		CB	82GLA 02
6.05	0.07		CB	80SCH 02
6.1	0.1	35	TCGS	79GLA 04
H2O- (%)				
11.4		D	GRAV	85NAR 03
11.4			GRAV	84NAR 01
Hf (ng/g)				
13			RTNA	80SLO 01
23			NAA	77LAU 01
27			ITNA	80CRE 01
28	2		ITNA	85WAH 01
31	4		ITNA	78LAU 02
34			ITNA	85MIS 01
37	5		ITNA	74RAN 02
46	12		ITNA	85MAD 01
Hg (ng/g)				
110	30		RTNA	77BAN 03
120	10	D	RTNA	74GOE 01
120	10		RTNA	73GOE 01
120	10		CVAA	84BAR 02
120	20		RTNA	80SLO 01
122		11	CVAA	79HOE 02
122	28		ITNA	84TU 01
125			AA	74RIC 01
125			IDMS	74RIC 01
130			CVAA	80NAD 01
130			CVAA	83MAR 05
138	2	11	CVAA	77TAG 01
140			ICPES	84MAR 01
140	10		NAA	77JER 01
140	10		PAA	74CHA 01
140	10		ITNA	74FRI 01
140	20		IDMS	72RAI 01
141	9		SSMS	74ALV 01
142	27		CVAA	82DOO 01
146			UU	74FEL 01
146	6		FAE	76CAV 01

Conc	Uncer	Com	Method	Reference
Hg (ng/g) cont.				
146	12		RTNA	82LO 01
146	17		NAA	76GUZ 01
148	10	7	RTNA	72HEI 01
148	16		CVAA	82SUL 01
150			AA	83ELA 01
150			CVAA	81NAR 01
150	5		FAA	72LYO 01
150	5.1		AA	84STO 01
150	10		RTNA	83BRA 01
150	10		FAA	83YAN 01
150	17		CVAA	74FIT 01
150	18		ITNA	82LIN 01
150	40		RTNA	83SIR 01
151	7		RTNA	84DRA 01
152	5	2	CVAA	79KNE 01
152	6		RTNA	76MEL 01
152	6		CVAA	80TON 01
153	8		CVAA	80KOR 01
153	14		FAA	75KOI 01
154	5		RTNA	74ORV 01
154	13		FAA	76DOG 01
154	13		CVAA	78DOG 01
154	16	5	RTNA	80GRE 01
154	20	7	RTNA	80GAL 02
154	20		RTNA	78GIL 01
154	28		FAA	74CHU 03
155	3		RTNA	72RAI 01
155	5.6		RTNA	72ROO 02
155	6		RTNA	72ROO 01
155	6	11	CVAA	77TAG 01
155	13	5	RTNA	80GRE 01
155	15		RTNA	73TJI 01
157	1		AF	81EBD 01
157	20		CVAA	82GLA 02
158			ITNA	80SAT 01
158			CVAA	84LAU 01
158			RTNA	74RIC 01
158	5		RTNA	72LYO 01
158	10		FAA	77GLA 03
158	16		RTNA	82LIN 01
159	21		CVAA	78MAT 01
160			RTNA	79DES 01
160	6		CVAA	72RAI 01
160	10		ITNA	83AHM 01
160	12		FAA	74SIE 02
160	12		FAA	72ROO 01
160	20		FAA	79STO 01
160	20		CVAA	82CHA 01
160	20		FAA	82JEN 02
160	30		RTNA	80VAL 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
Hg (ng/g) cont.				
160	40	6	POT	82JAG 01
160	70		ITNA	81KUL 01
161	13		RTNA	75LIT 01
162	10	7	RTNA	72HEI 01
163	6	17	CVAA	77TAG 01
163	12		RTNA	82GRI 01
165	5	35	CVAA	81GLA 04
165	25		ITNA	85WAH 01
167			ITNA	74RIC 01
168	10		ITNA	79AHM 01
168	10		ITNA	82QUR 01
170	12		CVAA	82LIN 01
175	5	17	CVAA	77TAG 01
180	10		ITNA	78FUR 01
180	20		ITNA	74RAN 02
180	30		RTNA	77MEL 01
180	40	6	POT	82JAG 01
190			ITNA	75RIC 01
190	10		NAA	78GAN 01
190	30	6	ITNA	74BEC 01
190	40		CVAA	77AND 01
200	20		ITNA	81KOS 01
200	30		PAA	80SEG 01
200	30		ITNA	81HAB 01
200	80		ITNA	74GUI 01
203	11	17	CVAA	77TAG 01
210	50		ITNA	77ZIK 01
240		17	CVAA	77TAG 01
305	70		ITNA	75LIT 01
Ho (ng/g)				
11	1		RTNA	86TSU 01
13		D	RTNA	82LAU 01
13			RTNA	77LAU 02
20			SSMS	78URE 01
22	2		RTNA	84ODD 01
I (ng/g)				
100	50		PAA	78HIS 01
100	50		PAA	77WIL 01
160	20		IENA	82SAT 01
167	10		RTNA	77ROO 01
173.2	4.4		RTNA	80GVA 01
183	6	17	NAA	79HEC 01
188	26		NAA	79BRA 01
190	70		IENA	84FAR 01
192	10		RTNA	83TAK 02
200	70		RTNA	77STE 02
220		17	NAA	79HEC 01

Conc	Uncer	Com	Method	Reference
I-129 (fCi/g)				
0.006	0.0028		RTNA	79BRA 01
In (ng/g)				
1.23	0.11		RTNA	74RAV 01
1.6	0.1		RTNA	78KOB 01
1.8	0.8		RTNA	77KUS 01
2	0.2		ITNA	85WAH 01
Ir (ng/g)				
15	3		RTNA	74CAR 03
K (%)				
1.05	1.406	RD	ITNA	79IMA 03
1.05	1.41	R	ITNA	79IMA 01
1.11			OES	75JON 05
1.19			OES	75JON 09
1.2		6	ICPES	83BRA 02
1.229	0.018		CPXRF	81ROB 02
1.25		6	ICPES	83BRA 02
1.26			OES	75JON 03
1.28			OES	75JON 11
1.3	0.2		14NAA	77SEG 01
1.33	0.01		ICPES	84ABD 01
1.35		1	AA	78SZY 01
1.35			OES	75JON 04
1.36	0.01	11	AA	78GAI 01
1.37			ITNA	80CRE 01
1.37	0.06		ITNA	74RAN 02
1.37	0.06		ITNA	84NDI 01
1.37	0.14		IENA	79JON 01
1.374		1	AA	78SZY 01
1.38			OES	75ISA 01
1.38	0.04		ITNA	75RIC 01
1.39			CPAA	80HAN 01
1.4			ITNA	82AKA 01
1.4			ICPES	84NAD 01
1.4		6	ICPES	85ABD 01
1.4			OES	75JON 02
1.4	0.01	11	AA	78GAI 01
1.4	0.06		ITNA	78LAU 02
1.4	0.098	6	NAA	78GAN 01
1.4	0.2	35	ITNA	81GLA 04
1.41			OES	75JON 07
1.41			AA	77BRU 01
1.41	0.03		TCGS	79AND 01
1.41	0.09		CPXRF	85CLA 01
1.42			EXRF	81BIS 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
K (%) cont.				
1.42			ITNA	78CAP 01
1.42	0.04		ITNA	81KOS 01
1.42	0.09		ITNA	76KUC 01
1.42	0.23		ITNA	84TU 01
1.43		6	ICPES	83BRA 02
1.43	0.04		EXRF	79KUE 01
1.43	0.06		FE	78KOR 01
1.43	0.07	11	ICPES	82JON 01
1.4375	0.0794		NAA	76GUZ 01
1.44	0.0004	11	AA	75ISA 01
1.44	0.04		RTNA	76MEL 03
1.445	0.11		PAA	76KAT 04
1.45			ITNA	79KUC 01
1.45			ICPES	79COO 01
1.45			OES	75JON 01
1.45	0.0003	11	AA	75ISA 01
1.45	0.02		AA	82HAR 01
1.45	0.03	11	ICPES	81MUN 01
1.45	0.08		PAA	76KAT 02
1.46	0.02		ITNA	85WAH 01
1.46	0.07		ITNA	83AHM 01
1.46	0.07		ITNA	79AHM 01
1.46	0.11		EXRF	82DAK 01
1.46	0.14		14NAA	80FAA 01
1.46	0.2		14NAA	81WIL 02
1.47			NAA	77LAU 01
1.47	0.02	11	ICPES	82JON 01
1.47	0.07	11	ICPES	82JON 01
1.47	0.1		ITNA	79REN 03
1.47	0.12		ITNA	79KOB 03
1.48			AA	79HIL 01
1.48			ICPES	81WEI 01
1.49		1	IENA	79KUC 01
1.49	0.03		ITNA	78GIL 01
1.49	0.04		TCGS	79FAI 01
1.49	0.194		ITNA	77HAM 01
1.496	0.043		ITNA	78FUR 01
1.5			ITNA	78KEL 02
1.5			RTNA	72MOR 03
1.5			ITNA	76BAT 01
1.5	0.05	11	ICPES	81MUN 01
1.5	0.08		VV	81NON 01
1.51			CPXRF	84KAU 01
1.51			XRF	78CAM 02
1.51	0.06		CPXRF	80KIR 01
1.51	0.06		EXRF	77NIE 01
1.54			OES	75JON 08
1.54	0.03		ITNA	80SLO 01
1.55	0.8		XRF	78STA 02
1.56	0.05	11	ICPES	82JON 01
1.57	0.08		EXRF	75REU 01
1.57	0.25		14NAA	81WIL 01
1.58	0.08	6	NAA	78GAN 01
1.59			OES	75JON 10
1.62			OES	75JON 06
1.65			ITNA	84TU 03
1.66	0.8	6	EXRF	79MAT 01
1.67	0.03	6	ICPES	85ABD 01
1.7	0.07		ICPES	79HER 01
1.74	0.04		EXRF	80DYC 01
1.81	0.08	6	EXRF	79MAT 01
3.89			EXRF	81PAR 01
La (ug/g)				
0.7	0.1		ITNA	77ZIK 01
0.8	0.05		RTNA	80SLO 01
0.88	0.07		RTNA	83SIR 01
0.89	1.25	R	ITNA	79IMA 01
0.89	1.25	RD	ITNA	79IMA 03
0.95			ITNA	79KUC 01
0.98			ITNA	80CRE 01
0.99	0.08	6	ITNA	74BEC 01
1.0			RTNA	77LAU 02
1.0			NAA	77LAU 01
1.0			NAA	74BEL 01
1.0		D	RTNA	82LAU 01
1.1		11	SSMS	85VOS 01
1.1	0.1		ITNA	78LAU 02
1.145	0.058		RTNA	86TSU 01
1.15	0.1		IENA	81KOS 01
1.17	0.15		ITNA	84TU 01
1.18	0.09		ITNA	81KOS 01
1.2			RTNA	72MOR 03
1.2			ITNA	78CAP 01
1.2			SSMS	78URE 01
1.2	0.1		RTNA	76MEL 03
1.2	0.1		ITNA	81KUL 01
1.2	0.165		ITNA	77HAM 01
1.2	0.3		ITNA	83AHM 01
1.209	0.039		RTNA	83TJI 01
1.22	0.02		VV	81NON 01
1.23	0.02		NM	85KAT 02
1.23	0.05		ITNA	84NDI 01
1.24	0.08		ITNA	79REN 03
1.24	0.18		ITNA	85MAD 01
1.26	0.2		ITNA	85KAT 02
1.27			ITNA	85MIS 01
1.27	0.33		ITNA	84ODD 01
1.3	0.1		ITNA	74RAN 02

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
La (ug/g) cont.				
1.4			NM	83KAT 01
1.44	0.2		RTNA	84ODD 01
1.7	0.6		RTNA	77KUS 01
1.96	0.02		ITNA	77NAD 02
Li (ng/g)				
<	900	L	CPAA	81SAS 01
500	80		AA	84GLA 11
510	660	R	AA	75MAN 01
570	70		AA	84GLA 02
770	30		ITNA	77HEY 01
800	200		CPAA	80HAN 01
830			AA	85GAU 04
13700	1500		NT	74CAR 02
14000	1000		RTNA	85YAN 01
Lu (ng/g)				
0.61	0.09		ITNA	77NAD 02
0.9	0.1		ITNA	81KOS 01
2.9	0.2		RTNA	83TJI 01
2.9	0.8		RTNA	86TSU 01
3.3		D	RTNA	82LAU 01
3.3			RTNA	77LAU 02
4	2		RTNA	83SIR 01
6			RTNA	80SLO 01
8.4	0.7		RTNA	84ODD 01
8.5	1.3		ITNA	83AHM 01
10			SSMS	78URE 01
Mg (ug/g)				
4000	6250	R	ITNA	79IMA 01
4000	6250	RD	ITNA	79IMA 03
4900			ICPES	78CAP 01
4900		6	ICPES	83BRA 02
4915			ICPES	81GOO 01
5140	190		VV	81NON 01
5300			FAA	78CAP 01
5400			NAA	77LAU 01
5400	100		ICPES	85LIE 02
5500			AA	80URE 01
5500		6	ICPES	85ABD 01
5500	300		ICPES	79ABE 01
5500	300		IENA	79JON 01
5600			AA	77BRU 01
5600			ITNA	84TU 03
5600		6	ICPES	83BRA 02
5600	100		AA	79MCQ 01
Mg (ug/g) cont.				
5640	420		AA	86GAU 01
5700			OES	75JON 05
5700	60		ICPES	79MCQ 02
5700	80		ICPES	79MCQ 01
5800	100	11	AA	78GAI 01
5800	300		ICPES	85LYO 01
5800	730		ITNA	77HAM 01
5900			ICPES	84NAD 01
5900	1	11	AA	75ISA 01
5900	300		AA	84GLA 11
5922	172	11	ICPES	81MUN 01
5960			CPXRF	84KAU 01
5980	70	11	ICPES	82JON 01
6000			RTNA	72MOR 03
6000			OES	75JON 09
6000			OES	75JON 07
6000	2	11	AA	75ISA 01
6000	100	11	AA	78GAI 01
6000	200	11	ICPES	82JON 01
6000	500		14NAA	80FAA 01
6000	500		ITNA	78LAU 02
6000	500		CPXRF	80KIR 01
6100			OES	75JON 10
6100			AA	79NIL 01
6100			ICPES	83KEI 01
6100	100		PAA	74CHA 01
6100	200		PAA	78HIS 01
6100	200	11	ICPES	82JON 01
6100	400		ITNA	80SLO 01
6100	1100		14NAA	81WIL 02
6150			ICPES	78DAH 01
6150	70		PAA	76KAT 02
6150	100		PAA	76KAT 04
6173.8	179		NAA	76GUZ 01
6174	173		ITNA	75PIE 01
6200			OES	75JON 02
6200			OES	75JON 08
6200		6	ICPES	83BRA 02
6200	100	11	ICPES	82JON 01
6200	200	6	ICPES	85ABD 01
6200	400		ICPES	84ABD 01
6221	153	11	ICPES	81MUN 01
6258	315		ITNA	77ZIK 01
6300			ITNA	78CAP 01
6300	130		ITNA	78FUR 01
6300	700		TCGS	79FAI 01
6400			OES	75ISA 01
6400			ICPES	81WEI 01
6500			OES	75JON 06
6500	100		COLOR	74SLE 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
Mg (ug/g) cont.				
6500	100		AA	82HAR 01
6550	480		ITNA	79KOB 03
6600			OES	75JON 11
6680			AF	85DAV 01
6700			CPAA	80HAN 01
6700	100		ICPES	79HER 01
6800			OES	75JON 03
6800			OES	75JON 04
6800	1000		14NAA	77SEG 01
7000			ITNA	76BAT 01
7030	170		14NAA	81WIL 01
7100			OES	75JON 01
7830			ITNA	75RIC 01
Mn (ug/g)				
23.1	4.4	6	ITNA	74HOF 01
32	16		EXRF	77FLO 01
52			OES	75JON 07
54	11		SSMS	84VOS 01
65	90	R	ITNA	79IMA 01
65	90	RD	ITNA	79IMA 03
68.2	8.2		XRF	77SMI 04
71.8		6	ICPES	83BRA 02
72			OES	75JON 06
72	1	11	AA	78GAI 01
73.5			ITNA	82AKA 01
76	10		ICPES	82AZI 02
77			SSMS	81VER 02
79	3		RTNA	76MEL 03
80			AA	73LOO 03
80			ICPES	78CAP 01
80			OES	75JON 11
80			OES	75ISA 01
80	3		XRF	78LIN 01
80.6	2.9		CPXRF	81ROB 02
80.7	3.3		ITNA	81HAB 01
81	4		RTNA	77KUS 01
81.3			FAA	78CAP 01
81.9		6	ICPES	83BRA 02
82		11	SSMS	85VOS 01
82			EXRF	82KEE 01
82	3		IENA	79JON 01
82	4.2		AA	78LIN 01
82	7		EXRF	79KUE 01
82	99	R	AA	75MAN 01
82.7			ICPES	84NAD 01
82.9	5.1		RTNA	83DAN 01
83.3			ICPES	78DAH 01
83.4			FAA	77SHE 02

Conc	Uncer	Com	Method	Reference
Mn (ug/g) cont.				
84			NAA	77LAU 01
84	1	11	ICPES	82JON 01
84	4		ITNA	78LAU 02
85			ITNA	78CAP 01
85	2	11	ICPES	82JON 01
85	4		EXRF	80DYC 01
85	10	6	EXRF	79MAT 01
85.6	2.8	6	ITNA	74HOF 01
86			AA	76FUK 01
86			ASV	80CHR 01
86			RTNA	72MOR 03
86			ITNA	84GLA 02
86		6	ICPES	83CHA 01
86	1		ICPES	79MCQ 02
86	2		ICPES	79MCQ 01
86	2		ICPES	83SCH 04
86	2	11	ICPES	82JON 01
86.5	4.9		EXRF	79GIA 01
86.8	6.7		ICPES	85LYO 01
86.8	7.2	11	ICPES	81MUN 01
87		11	SSMS	85VOS 01
87		11	AA	79HOE 02
87			FAA	73SEG 01
87.1	1.6		RTNA	73HEY 01
87.3	8.8		ICPES	82AZI 01
87.8	5.9		RTNA	74RAV 01
88			OES	75JON 02
88			OES	75JON 04
88	1		AA	84SAT 02
88	2		AA	82HAR 01
88	3	7	RTNA	84FAR 02
88	3	7	RTNA	84FAR 02
88	4		ICPES	85LIE 02
88	4.4	11	AA	75ISA 01
88.2	3.4		PAA	74CHA 01
88.6	2.2		EXRF	73GIA 01
88.8		11	AA	79HOE 02
89	0.6		ICPES	79HER 01
89	1	11	ICPES	82JON 01
89	2.67	11	AA	75ISA 01
89	3	D	ICPES	80SCH 08
89	3		VV	80SCH 05
89	4		ITNA	74RAN 02
89	4		AA	79MCQ 01
89	4.4		ITNA	79KOB 03
89	5		ITNA	78GIL 01
89	5		FAA	84ROS 01
89	7		EXRF	85COE 02
89.4	1.4	11	ASV	84LOC 01
89.9			ITNA	76BAT 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
Mn (ug/g) cont.				
90			ITNA	80CRE 01
90		6	ICPES	83BRA 02
90	0.9	11	AA	78GAI 01
90	1		ITNA	80SLO 01
90	3		ICPES	79ABE 01
90	4	7	RTNA	84FAR 02
90	6		ITNA	76KUC 01
90	7		ITNA	77HAM 01
90	12		CPXRF	77CAM 01
90	16		SSMS	84VOS 01
90.9	4.7		ASV	84LOC 01
91			EXRF	81BIS 01
91	0.8	11	ASV	84LOC 01
91	2		ITNA	85WAH 01
91	2	6	NAA	78GAN 01
91	4		FAA	79WES 01
91	4		ICPES	84ABD 01
91.1	10.9		ITNA	85MAD 01
91.1	18		EXRF	75REU 01
91.5			AA	83FAG 01
91.6	1.08		NAA	76GUZ 01
92			AA	76KRI 03
92		6	ICPES	83CHA 01
92	1	D	DCPES	81REE 01
92	1		DCPES	79REE 01
92	3		ITNA	78FUR 01
92	3		ITNA	75RIC 01
92	3		AA	83RAP 01
92	4	35	ITNA	81GLA 04
92	17		SSMS	84VOS 01
92.4	0.8		ICPES	81KNA 01
92.8	4		ITNA	83AHM 01
93			AA	83ELA 01
93			ITNA	80SAT 01
93			XRF	78CAM 02
93			OES	75JON 05
93	6		EXRF	77NIE 01
93	8		XRF	78STA 02
93.8	17.2		PAA	80YAM 01
94	3.5	6	NAA	78GAN 01
94.5	5		PAA	76KAT 04
94.8	4		ITNA	79AHM 01
94.8	4		ITNA	82QUR 01
95		6	ICPES	85ABD 01
95			AE+AF	79ULL 01
95	4		PAA	76KAT 02
95	7.3		CPXRF	80KIR 01
95	12		ITNA	79SAT 01
95.4	2.1		ITNA	76GAL 01
95.7	2	11	ICPES	81MUN 01
96			ICPES	81WEI 01
96			ICPES	81GOO 01
96			OES	75JON 03
96	5		PAA	78HIS 01
96.2	4.8		AA	76GAL 01
96.8	3.6		AA	73THO 01
97			OES	75JON 10
97			CPXRF	84KAU 01
97	10		ITNA	77ZIK 01
97.4			CPXRF	75CAM 01
98			XRF	80SUZ 02
98	20		TCGS	79FAI 01
98.9	11		CPXRF	85CLA 01
99	12		SSMS	84VOS 01
100			ITNA	78KEL 02
101			OES	75JON 01
101	5		ICPES	84SOB 01
101	10		XRF	74REU 01
103	5		VV	81NON 01
104	9		ITNA	84NDI 01
106	3	6	ICPES	85ABD 01
107			ITNA	84TU 03
107	3		SSMS	72MAG 01
110			ITNA	79REN 03
110	9	6	EXRF	79MAT 01
131			OES	75JON 08
144			OES	75JON 09
242			EXRF	81PAR 01
Mo (ng/g)				
110	80	11	ICPES	82JON 01
200		11	SSMS	85VOS 01
200			FAA	79BEN 01
200	100	11	ICPES	82JON 01
200	100	11	ICPES	82JON 01
200	200	11	ICPES	82JON 01
230	20		COLOR	83MAT 02
240	20		RTNA	78NAD 01
240	21		RTNA	82HAD 01
250		1	IENA	79KUC 01
260	20		FAA	84GOH 01
270	9		RTNA	85TIA 01
280	20		ICPES	82LYO 01
280	30		RTNA	83DAN 01
300	30	D	RTNA	74GOE 01
300	30		RTNA	73GOE 01
300	60		RTNA	77DIK 01
320		1	IENA	79KUC 01
320	60		RTNA	80SLO 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
Mo (ng/g) cont.				
320	80		RTNA	84MOK 02
327	70		NAA	76GUZ 01
390	40		FAA	81NEU 01
400	30		RTNA	83SIR 01
400	100		PAA	80SEG 01
410			POL	83BOU 01
410			AA	83BOU 01
2260	210		PAA	74CHA 01
2300			OES	75JON 10
3300			OES	75JON 11
4000	2000		CPAA	77ZIK 01
4600			OES	75JON 03
6200			OES	75JON 01
10500			OES	75JON 07
15200			OES	75JON 02
N (%)				
2.59	0.11		CB	82GLA 02
2.61	0.05		14NAA	80FAA 01
2.62	0.03		CB	80SCH 02
2.7	0.01	11	TITR	82LIA 01
2.7	0.09	13	NT	74CAR 01
2.7	0.09		TCGS	79FAI 01
2.7	0.4	35	TCGS	79GLA 04
2.7	0.4		14NAA	77SEG 01
2.71	0.01		TITR	80GIN 01
2.72		11	TITR	82LIA 01
2.74	0.01	11	TITR	82LIA 01
2.74	0.01		COLOR	80GIN 01
2.74	0.02	11	TITR	82LIA 01
2.75	0.03	11	TITR	82LIA 01
2.755	0.038		GRAV	74CAR 01
2.76	0.09	13	NT	74CAR 01
2.81	0.15		TCGS	79AND 01
N-15 (atom %)				
0.367	0.002		MS	73CAR 01

Conc	Uncer	Com	Method	Reference
Na (ug/g)				
40			OES	75JON 03
45.8	6	11	ICPES	81MUN 01
50.5	1	11	ICPES	81MUN 01
66	6		ICPES	85LIE 02
74			OES	75JON 06
75			NAA	77LAU 01
76			NAA	74BEL 01
76	34	6	ICPES	85ABD 01
77			RTNA	72MOR 03
77	4		RTNA	76MEL 03
77	6		ITNA	80SLO 01
78	3		ITNA	74RAN 02
78	5		ITNA	76KUC 01
79.2	1.8		ITNA	84NDI 01
79.3	5		PAA	74CHA 01
80			ITNA	78LAU 02
80			ITNA	84TU 03
80	2		FE	81MIZ 01
80	3		ITNA	85WAH 01
80.6	1.3		FE	78KOR 01
81			ICPES	81GOO 01
81			ITNA	79KUC 01
81	17		ITNA	78FUR 01
81.5	3		ITNA	79AHM 01
81.6	3		ITNA	83AHM 01
81.8	1.83		NAA	76GUZ 01
82		1	IENA	79KUC 01
83	5		ITNA	75RIC 01
83	8.5		ITNA	77HAM 01
84	4		ITNA	78GIL 01
84.4			ITNA	76BAT 01
86	1		VV	81NON 01
86	5		ITNA	77ZIK 01
87			CPAA	80HAN 01
87	11		PAA	76KAT 02
87	16		PAA	76KAT 04
88	6.8		ITNA	79KOB 03
88	142	R	ITNA	79IMA 01
88	142	RD	ITNA	79IMA 03
89	17		AA	82HAR 01
90	8		ITNA	81KOS 01
92			ITNA	80CRE 01
92		35	ITNA	81GLA 04
93	14		ICPES	84ABD 01
99.8	6.7		ITNA	85MAD 01
100			OES	75JON 01
100			OES	75JON 05
101		6	ICPES	85ABD 01
103.5			ITNA	82AKA 01
110		35	ITNA	81GLA 03

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
Na (ug/g) cont.				
114	2		NAA	78GAN 01
120	40		ITNA	79REN 03
123			ICPES	84NAD 01
130		11	SSMS	85VOS 01
140	12		ICPES	79ABE 01
150			OES	75JON 04
154			OES	75JON 09
155			ITNA	78CAP 01
162		1	AA	78SZY 01
170	30		IENA	79JON 01
200			AA	77BRU 01
206	21		ICPES	84SOB 01
244		1	AA	78SZY 01
400			OES	75JON 11
524			OES	75JON 08
Nb (ug/g)				
<	0.3	L	PAA	78HIS 01
Nd (ng/g)				
320	90		ITNA	77NAD 02
407	20		ITNA	840DD 01
420	90		RTNA	83SIR 01
423	9		RTNA	840DD 01
480			SSMS	78URE 01
570			RTNA	77LAU 02
570		D	RTNA	82LAU 01
582	48		RTNA	86TSU 01
600		11	SSMS	85VOS 01
765	51		RTNA	83TJI 01
Ni (ug/g)				
0.7			CPXRF	75CAM 01
0.95		11	SSMS	85VOS 01
1		1	IENA	79KUC 01
1.1		16	AA	79ABO 01
1.1			AA	83ELA 01
1.1	0.1	6	ICPES	85ABD 01
1.1	0.5		AA	83RAP 01
1.14	0.08		FAA	79STO 01
1.15	0.07	11	ICPES	82JON 01
1.15	0.09	11	ICPES	82JON 01
1.18	0.08		AA	80AGE 01
1.2			XRF	78CAM 02
1.2			FAA	85LON 01
1.2	0.063	6	COLOR	78FUD 01
1.2	0.07	6	COLOR	78FUD 01
1.2	0.4		FAA	82GRO 01
1.2	0.5		EXRF	79GIA 01
1.2	1		EXRF	77NIE 01
1.2	1		EXRF	85COE 02
1.24	0.07	11	ICPES	82JON 01
1.264	0.052		FAA	84GRE 01
1.27	0.08	11	ICPES	82JON 01
1.27	0.08		PAA	74CHA 01
1.28	0.16		NAA	76GUZ 01
1.3			AA	73LOO 03
1.3	0.07		VOLT	81PIH 01
1.3	0.1		AA	84SAT 02
1.3	0.1		HPLC	831CH 01
1.3	0.1		RTNA	75ABU 01
1.3	0.2	9	ITNA	78LAU 02
1.3	0.4		EXRF	73GIA 01
1.3	0.5	11	ICPES	81MUN 01
1.3	0.6		ICPES	84SOB 01
1.31	0.11		ITNA	75PIE 01
1.31	0.17		FAA	80DOR 01
1.32	0.02		ASV	85ADE 01
1.33	0.07		VOLT	84ADE 02
1.36	0.11		FAA	86GAU 01
1.37	0.03		COLOR	77BUR 01
1.38			POL	85UTO 01
1.4			FAA	82HOE 01
1.4			FAA	73SEG 01
1.4		1	IENA	79KUC 01
1.4	0.1		POL	72MAI 01
1.4	0.1		POL	74MAI 01
1.4	0.1		POL	77MAI 01
1.4	0.3		RTNA	77MEL 01
1.4	0.4		XRF	78STA 02
1.4	0.6		ITNA	74RAN 02
1.5	0.2		PAA	80SEG 01
1.5	0.3		EXRF	80DYC 01
1.5	0.3		PAA	80YAM 01
1.5	0.3		RTNA	80SLO 01
1.5	0.7		CPXRF	85CLA 01
1.6		11	SSMS	85VOS 01
1.6	0.4		AA	78RIT 01
1.7	0.1		DCPES	79REE 01
1.7	0.1	D	DCPES	81REE 01
1.8			CPXRF	84KAU 01
1.8			POL	83HOL 01
1.8	0.2		ICPES	79ABE 01
2			NAA	77LAU 01
2.1	0.02		ICPES	79HER 01
2.2	0.7		14NAA	81WIL 01
2.6	1		CPXRF	80KIR 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
Ni (ug/g) cont.				
2.9	1		CPXRF	77CAM 01
4			AE+AF	79ULL 01
4	1.3		AA	79MON 01
4.3		16	AA	79ABO 01
6	0.9		ICPES	84ABD 01
P (ug/g)				
1400			OES	75JON 04
1500			OES	75JON 05
1500		11	SSMS	85VOS 01
1560			ICPES	78CAP 01
1600			ICPES	84NAD 01
1760			CPXRF	84KAU 01
1770	90		ICPES	81OWE 01
1800		6	ICPES	83CHA 01
1800			OES	75JON 07
1800			OES	75JON 11
1800	100		COLOR	79MCQ 01
1845			ICPES	81GOO 01
1883	100		ICPES	84PRI 01
1900		6	ICPES	83CHA 01
1900			OES	75JON 10
1900			OES	75JON 06
1900	40		ICPES	79MCQ 02
1900	40		ICPES	84ABD 01
1900	100		ICPES	85LIE 02
1900	100		ICPES	79MCQ 01
1900	200	6	FAA	81LAN 01
1901	61	11	ICPES	81MUN 01
1920	1000		EXRF	77NIE 01
1930			COLOR	77HAM 04
1958	69	11	ICPES	81MUN 01
1970	70	11	ICPES	82JON 01
1980	40	11	ICPES	82JON 01
2000		6	ICPES	83BRA 02
2000			COLOR	79HIL 01
2000			CPAA	80HAN 01
2000			ICPES	79EDI 01
2000	100	6	FAA	81LAN 01
2000	100	6	FAA	81LAN 01
2000	100		14NAA	81WIL 01
2000	200		14NAA	81WIL 02
2000	400		CPXRF	80KIR 01
2000	500		ICPES	79ABE 01
2060	40	11	ICPES	82JON 01
2070	70	7	NM	81SHI 01
2070	100		IENA	79JON 01
2090	60	11	ICPES	82JON 01
2096.7	70.14		NAA	76GUZ 01

Conc	Uncer	Com	Method	Reference
P (ug/g) cont.				
2100			OES	75JON 02
2100			FAA	79EDI 01
2100			OES	75JON 09
2100		6	ICPES	83BRA 02
2100	80	12	FAA	78EDI 01
2100	100		14NAA	80FAA 01
2100	130	7	NM	81SHI 01
2110	110	7	NM	81SHI 01
2130	20		ICPES	79HER 01
2160	50	12	FAA	78EDI 01
2190	110	7	NM	81SHI 01
2200			EXRF	81OHT 01
2300			OES	75JON 08
2380	180		EXRF	75REU 01
2400			OES	75JON 03
2400	100	6	ICPES	85ABD 01
2400	200		ICPES	85LYO 01
2500	400		14NAA	77SEG 01
2600		6	ICPES	83BRA 02
2600		6	ICPES	85ABD 01
3100			OES	75JON 01
Pb (ug/g)				
15	5.1		CPXRF	80KIR 01
17.6			SSMS	81VER 02
24	7		SSMS	84VOS 01
26			AA	76FUK 01
26	7		SSMS	84VOS 01
28.5	3.6		FAA	77FUJ 01
31	2		ICPES	81NAD 01
33.6	1.5		FAA	77BRU 01
34	7		SSMS	84VOS 01
37			AA	73LOO 03
37	8		SSMS	84VOS 01
37.3	7		XRF	78STA 02
38	3		FAA	77LOR 01
39	1		ASV	85ADE 01
40			AA	83ELA 01
40		11	SSMS	85VOS 01
40	2		EXRF	73SPA 01
40	3		AA	82ROD 03
40	4		PAA	78HIS 01
40.2		11	HAA	84KUM 01
40.7	3		EXRF	79GIA 01
41			ICPES	78DAH 01
41	0.6		ICPES	84ABD 01
41	1		ICPES	79HER 01
41	2		ICPES	85LIE 02
41	2		AA	84GLA 02

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
Pb (ug/g) cont.				
41	3		AA	84SAT 02
41.5			ICPES	85NAR 02
41.8	1.1		HPLC	83ICH 01
42		6	ICPMS	83DOU 01
42			ICPES	84MAR 01
42			FAA	82HOE 01
42		11	SSMS	85VOS 01
42			FAA	78URE 02
42	1		ICPES	79MCQ 02
42	1.7		AA	80AGE 01
42	3		ICPES	79MCQ 01
42	4		ITNA	77GUI 02
42	4		NAA	76MIL 02
42	9		14NAA	81WIL 02
42.1		11	HAA	84KUM 01
42.2		11	FAA	79HOE 02
42.8	3.1	11	ASV	84LOC 01
42.9		11	FAA	79HOE 02
43			FAA	80PRE 01
43			SSMS	74LUT 01
43			EXRF	84PIN 01
43	2		POT	84PIN 01
43.2	5.1		FAA	82JEN 02
43.3			AA	76KRI 03
43.4		6	POL	72SIN 01
43.7	0.9		HAA	76VIJ 01
44			FAA	79HEI 03
44			FAA	73SEG 01
44	2		NAA	77JER 01
44	2		FAA	80LEG 01
44	2		AA	75ABU 01
44	2	11	ICPES	82JON 01
44	2.3	6	POL	72SIN 01
44	4		FAA	81KNA 01
44	5		FAA	84ROS 01
44	6		FAA	84GLA 11
44.1	3.1	11	ICPES	81MUN 01
44.1	4		AA	83RAP 01
44.2	2.1		PAA	74CHA 01
44.3			FAA	79YAS 01
44.5	1.7		POL	74MAI 01
44.5	6.2		XRF	77SMI 04
44.6	1.7		POL	72MAI 01
44.6	1.7		POL	77MAI 01
44.67	1.53		ASV	77KON 01
44.7	0.8	6	FAA	84FUD 01
44.9			ICPES	78CAP 01
44.9	1		ASV	82SAT 02
45		6	ICPMS	83DOU 01
45			POL	74LUT 01
45		6	FAA	81JAC 01
45	0.5		AA	73TAL 01
45	2		PAA	74LUT 01
45	3.6		AA	79MON 01
45.1			CPXRF	84KAU 01
45.1	2.5		AA	84STO 01
45.3			CPXRF	75CAM 01
45.3	0.7		FAA	79DAB 02
45.3	0.9		FAA	81KIT 01
45.3	1.13		FAA	82VAN 01
45.4	2		EXRF	73GIA 01
45.5	0.4	6	FAA	84FUD 01
45.5	0.7	6	FAA	84FUD 01
45.5	1		RTNA	72GIB 01
45.7	1.3		ASV	84LOC 01
45.8		6	DCPES	84SNE 01
45.9	0.14		FAA	79STO 01
45.9	1.2	11	ASV	84LOC 01
46		6	DCPES	84SNE 01
46			FAA	82PRE 01
46	1	11	ICPES	82JON 01
46	2		AA	77YAN 01
46	2		FAA	79KRA 01
46	2		AA	80SCH 05
46	2	D	FAA	80SCH 08
46	52	R	AA	75MAN 01
46.1	7		CPXRF	85CLA 01
46.2	3.5	11	ICPES	81MUN 01
46.4			AA	74BOP 01
46.5		16	AA	79ABO 01
46.5	1.3		XRF	85AVA 01
46.8	5.6		HAA	82WEI 01
47			AA	79HIL 01
47			ICPES	81WEI 01
47		6	FAA	81JAC 01
47	0.5		IDMS	83BRO 01
47	2.5		ASV	79BRI 02
47	4		ICPES	79ABE 01
47	5		ASV	81DOG 01
47	6		EXRF	79KUE 01
47.1	4.7		XRF	74REU 01
47.3	5.6		FAA	82WEI 01
48	5		AA	82RIT 01
48	5		AA	78RIT 01
48.6	3.8		EXRF	75REU 01
49			DCPES	78NAK 01
49	2		PAA	80SEG 01
49	5		EXRF	77NIE 01
49.3		16	AA	79ABO 01
49.3	1.5		PAA	80YAM 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
Pb (ug/g) cont.				
49.7	1.4	6	FAA	84FUD 01
50			AE+AF	79ULL 01
50			FAA	74BRA 03
50			AA	76FUK 01
50	5		EXRF	77FLO 01
50	11		AA	79MCQ 01
51	3		EXRF	80DYC 01
52.6			FAA	78CAP 01
54	10		CPXRF	77CAM 01
54.5	7.2		ICPES	82AZI 01
56	1	6	ICPES	85ABD 01
57	12		14NAA	81WIL 01
57	17		CPAA	77ZIK 01
58		6	ICPES	85ABD 01
67.5		6	DCPES	84SNE 01
76.1			AF	85NAR 02
85			OES	75BOL 02
115			EXRF	81PAR 01
Pd (ng/g)				
<	1	L	RTNA	81BYR 01
Pr (ng/g)				
60			SSMS	78URE 01
65	3		RTNA	84ODD 01
103	15		RTNA	86TSU 01
110			RTNA	80SLO 01
230			RTNA	77LAU 02
230		D	RTNA	82LAU 01
270		11	SSMS	85VOS 01
Pt (ng/g)				
<	1		RTNA	84TJI 01
0.2			RTNA	82ZEI 01
89.2	15.4		RTNA	77NAD 01
1200	300		RTNA	74CAR 03
Rb (ug/g)				
5	2		EXRF	77FLO 01
8.5	0.6		EXRF	85COE 02
9.8		11	SSMS	85VOS 01
9.8	1.3		XRF	77SMI 04
9.9	2.6		SSMS	84VOS 01
10			CPXRF	84KAU 01
10		11	SSMS	85VOS 01
10			NAA	77LAU 01

Conc	Uncer	Com	Method	Reference
Rb (ug/g) cont.				
10			ITNA	80CRE 01
10	0.9		ITNA	79AHM 01
10	1		14NAA	81WIL 02
10	1		EXRF	79KUE 01
10	1.5		CPXRF	80KIR 01
10.3		1	IENA	79KUC 01
10.3	0.6		ITNA	74RAN 02
10.3	0.7		ITNA	75RIC 01
10.5			ITNA	79KUC 01
10.5			ITNA	78CAP 01
10.6		1	IENA	79KUC 01
10.8	0.4		ITNA	79SAT 01
10.8	2		SSMS	84VOS 01
10.95	0.08		ITNA	81KOS 01
11			RTNA	72MOR 03
11	0.8		EXRF	73GIA 01
11	1		ITNA	77ZIK 01
11	1		EXRF	80DYC 01
11	1		ITNA	78LAU 02
11	2		RTNA	77MEL 01
11	2		CPXRF	77CAM 01
11	16	R	AA	75MAN 01
11.2	0.3		IENA	81KOS 01
11.2	0.4		EXRF	73SPA 01
11.2	0.9		ITNA	83AHM 01
11.2	1.5		ITNA	81HAB 01
11.28	0.42		NAA	76GUZ 01
11.3	2.9	5	ITNA	80TOU 01
11.3	5.2		EXRF	75REU 01
11.4			EXRF	81BIS 01
11.5			XRF	78CAM 02
11.5	0.6		EXRF	79GIA 01
11.5	0.9		FAA	83GRO 02
11.5	1		EXRF	77NIE 01
11.6	1		ITNA	85MAD 01
11.6	3.4		SSMS	84VOS 01
11.7	0.1		ITNA	78GIL 01
11.8			ITNA	80SAT 01
11.8	1.2	35	ITNA	81GLA 03
11.9	0.8		NAA	78GAN 01
12			NAA	74BEL 01
12	0.04		ITNA	78FUR 01
12	0.7		ITNA	82COR 01
12	1.1	6	ITNA	74BEC 01
12	1.5		ITNA	77HAM 01
12	2		ITNA	76KUC 01
12.1	1	9	ITNA	78LAU 02
12.5			ITNA	85MIS 01
12.5	0.6		PAA	78HIS 01
12.5	1		PAA	76KAT 04

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
Rb (ug/g) cont.				
12.6	2.1		XRF	78STA 02
12.8	0.6		14NAA	81WIL 01
12.8	0.7		CPXRF	85CLA 01
13	0.9		VV	81NON 01
13	1		PAA	76KAT 02
13	2		ITNA	81KUL 01
13	3.5		CPXRF	81ROB 02
13.1	2.5		SSMS	84VOS 01
14	1		ITNA	84TU 01
14	2		ITNA	85WAH 01
14.8			CPXRF	75CAM 01
15.61	3.01		ITNA	79REN 03
19.9			SSMS	81VER 02
28			EXRF	81PAR 01
30			CPAA	78MCG 01
30			CPXRF	76ZEI 01
S (ug/g)				
1200			CB	72JON 03
1400	200	17	VV	72JON 03
1400	600		CPXRF	79REN 02
1660	220		TCGS	79AND 01
1690	5		TITR	80SMI 01
1700	200		TCGS	79FAI 01
1760	790	7	NM	83LI 01
1830			CPXRF	84KAU 01
1850	30		XRF	83GUN 01
1860	90		ICPES	84MOR 01
1860	180		COLOR	82BAR 01
1890	100		ICPES	84PRI 01
1900	34		CB	84HER 01
1920	20		CB	84LEC 02
1920	90		CB	86BOW 01
1943	23		CB	86GAU 01
1950	200		XRF	82BAR 01
1960		D	CB	85JAC 01
1960	40	6	CB	84JAC 01
2000	300		IC	83HER 01
2020	180		CB	84GLA 11
2028	21		ICPES	85LIE 02
2040		D	CB	85JAC 01
2040	60	6	CB	84JAC 01
2120			XRF	78CAM 02
2120	50		EXRF	77NIE 01
2140	60		WXRF	86BOW 01
2150	200		CB	77LAN 01
2150	380		EXRF	75REU 01
2200	103		CPXRF	80KIR 01
2200	1100	7	NM	83LI 01

Conc	Uncer	Com	Method	Reference
S (ug/g) cont.				
2300	200		TCGS	77JUR 01
2400			TURB	79BOG 01
2400			FE	79BOG 01
2600	400		CPAA	84ROU 01
2600	400		CPAA	85FRI 01
2700	400		XRF	81NAD 01
7020	2620		EXRF	77NIE 01
Sb (ug/g)				
1.1	0.2		ITNA	77ZIK 01
2.2	0.2		HAA	74LOO 01
2.3		11	SSMS	85VOS 01
2.3	0.26		RTNA	83SIR 01
2.3	0.3	H	ICPES	79ROB 01
2.5			ITNA	78CAP 01
2.5	3.6	R	ITNA	79IMA 01
2.5	3.6	RD	ITNA	79IMA 03
2.55		11	FAA	79HOE 02
2.55		11	FAA	79HOE 02
2.57	0.19		ITNA	79REN 03
2.58	0.47		ITNA	85MAD 01
2.62		6	NAA	78GAN 01
2.7			ITNA	80CRE 01
2.7		1	IENA	79KUC 01
2.7			NAA	77LAU 01
2.7	0.1		ITNA	78LAU 02
2.7	0.2	D	RTNA	74GOE 01
2.7	0.2		RTNA	73GOE 01
2.7	0.2		ITNA	85WAH 01
2.7	0.3		ITNA	74RAN 02
2.7	0.3	6	ITNA	74BEC 01
2.7	0.4		14NAA	81WIL 02
2.7	0.4	6	ITNA	74BEC 01
2.72	0.01		ITNA	79AHM 01
2.72	0.01		ITNA	83AHM 01
2.72	0.2		ITNA	82QUR 01
2.77	0.02	H	ICPES	81PAH 01
2.8			HAA	80HON 01
2.8			ITNA	79KUC 01
2.8		1	IENA	79KUC 01
2.8		11	HAA	82KUE 03
2.8			ITNA	85MIS 01
2.8	0.1	7	RTNA	77GIL 03
2.8	0.1		RTNA	78GAL 01
2.8	0.1	H	ICPES	82HAH 01
2.8	0.1	7	RTNA	80GAL 02
2.8	0.2		ITNA	81KOS 01
2.8	0.2		ICPES	83OLI 01
2.85	0.06		RTNA	80SLO 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
Sb (ug/g) cont.				
2.86	0.08		RTNA	78GIL 01
2.88	0.05		ITNA	80GAL 02
2.88	0.05	7	RTNA	77GIL 03
2.9		11	KAA	82CRO 03
2.9	0.09		RTNA	79NOE 01
2.9	0.1		IENA	81KOS 01
2.9	0.2		ITNA	78VAL 01
2.9	0.3		ITNA	84TU 01
2.9	0.5		RTNA	79REN 01
2.92	0.08	7	RTNA	80GAL 02
2.92	0.08	7	RTNA	77GIL 03
2.95	0.25		AA	83RAP 01
2.99	0.05		HAA	76FIO 01
2.99	0.45		RTNA	79ROS 02
3			RTNA	79BYR 01
3			RTNA	72MOR 03
3		11	HAA	82KUE 03
3	0.1		HAA	85YAM 01
3	0.2		FAA	80NAK 01
3	0.2	7	RTNA	80GAL 02
3.02	0.26		HAA	79VIJ 01
3.1		11	HAA	82CRO 03
3.1	0.03		VV	81MON 01
3.1	0.1		ITNA	79SAT 01
3.1	0.7		ITNA	77HAM 01
3.14	0.13		RTNA	72BYR 01
3.15	0.26		PAA	74CHA 01
3.16	0.26		NAA	77JER 01
3.2	0.2		GCMES	75TAL 01
3.25	0.3		PAA	76KAT 04
3.3		11	HAA	82KUE 03
3.3	0.14		ITNA	79KOB 03
3.3	0.2	5	ITNA	80TOU 01
3.3	0.2		PAA	76KAT 02
3.3	0.3		ITNA	81KUL 01
3.3	0.6		RTNA	77KUS 01
3.31	0.15		ITNA	84NDI 01
3.5			ICPES	85NAR 02
3.5			AF	85NAR 02
3.5	0.2		PAA	78HIS 01
3.5	0.3		FAA	78HAY 01
3.78	0.02		ITNA	81HAB 01
3.8	0.2		RTNA	73TJI 01
3.8	0.6	6	NAA	78GAN 01
5.1	1.1		14NAA	81WIL 01

Conc	Uncer	Com	Method	Reference
Sc (ng/g)				
40		6	NAA	78GAN 01
40	3	6	ITNA	74BEC 01
40	10	6	NAA	78GAN 01
41	4		VV	81NON 01
44	3		ITNA	74RAN 02
50	10		RTNA	83SIR 01
52	3		ITNA	79CHA 04
54	4		RTNA	80SLO 01
57	6		ITNA	81KOS 01
60	1		ITNA	78LAU 02
62			NAA	74BEL 01
62	2		ITNA	79KOB 03
62	3		ITNA	84TU 01
62	4.5		ITNA	85MAD 01
63	8		ITNA	76KUC 01
65			NAA	77LAU 01
65	3		ITNA	75RIC 01
66			ITNA	85GAU 04
66	3		ITNA	84GLA 11
66	6		ITNA	79SAT 01
67			ITNA	78CAP 01
67	5		ITNA	81HAB 01
70.1	4		ITNA	83AHM 01
73			ITNA	80CRE 01
75	5	5	ITNA	80TOU 01
75	7		ITNA	85WAH 01
80			ITNA	79KUC 01
80	6		ITNA	79REN 03
81	2		ITNA	84GIB 01
90			ITNA	85MIS 01
90	20		ITNA	81KUL 01
110			SSMS	78URE 01
170	50		RTNA	77MEL 01
200			RTNA	72MOR 03
220	10		PAA	74CHA 01
Se (ng/g)				
24	6.7		FAA	81MEY 01
53			FLUOR	79TAM 01
55	9		HAA	76FIO 01
56	20		RTNA	79ROS 02
57	6.3		ITNA	77HAM 01
58	14		RTNA	73TJI 01
60	20	D	RTNA	74GOE 01
60	20		RTNA	73GOE 01
60	20		ICPES	83OLI 01
64		7	ICPES	84MIA 01
65	14	9	ITNA	80WAN 01
68			FAA	82HEI 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
Se (ng/g) cont.				
70			FAA	78CAP 01
70		11	HAA	85PIW 01
70	4		ICPES	80HAA 01
70	10	H	ICPES	82HAH 01
70	20		HAA	82TAM 01
70	200	R	RTNA	81GLA 03
72	8		FLUOR	83KOH 01
74			ITNA	81MEY 01
74			ITNA	81HAN 01
75	5	7	RTNA	80GAL 02
75	5	7	RTNA	77GIL 03
75	20		AA	83RAP 01
76	1.3		HAA	81HAN 01
76	3	11	GC	81UCH 02
76	10		ITNA	79AHM 01
77		17	FLUOR	74AND 01
77	2	11	GC	81UCH 02
77	5		FLUOR	76CHA 02
77	6		FAA	79VOB 01
78			HAA	77IHN 01
78		7	ICPES	84MIA 01
78	4		ASV	84ADE 01
78	4		RTNA	78COO 01
78	4		ITNA	77GUI 02
78	5		GC	77POO 01
78	7	34	HAA	78FLA 01
78	7.2		HAA	81MEY 01
78	10		ITNA	83AHM 01
78	10		ITNA	85WAH 01
78	11		RTNA	82POL 01
79	12		RTNA	77ROO 02
79	12		RTNA	72ROO 03
79.8	8		NAA	76GUZ 01
80		17	FLUOR	74AND 01
80			NAA	78GAN 01
80			RTNA	72MOR 03
80		7	ICPES	84MIA 01
80	1		FAA	80NEV 01
80	4		FLUOR	80KOH 01
80	10		RTNA	80KNA 01
80	10	9	ITNA	79VOB 01
80	10	9	ITNA	79PAV 02
80	10		RTNA	75ABU 01
80	10		RTNA	74ORV 01
80	10		ITNA	84GIB 01
80	20		HAA	80AGE 02
80	20		SSMS	77ROO 02
80	30		ITNA	81KOS 01
80.4	4.6		RTNA	78GOF 03
81	9		HAA	84CHU 01
82	20		IENA	81KOS 01
82	24		HAA	76IHN 02
83	4		DCPES	81CAR 02
83	4		GCMES	74TAL 02
83	4		VV	81NON 01
83	12	9	ITNA	77VOB 01
84	8		RTNA	78GIL 01
85	4		ITNA	79SAT 01
86	10		ITNA	78GIL 01
87		17	FLUOR	74AND 01
87	3	6	FLUOR	75OLS 01
87	3		FLUOR	74LEI 01
87	7		HAA	75SIE 01
87	10	7	RTNA	77GIL 03
87	10	7	RTNA	80GAL 02
88	7		RTNA	73HEY 01
88	11		FLUOR	74IHN 02
88	16		ASV	76AND 01
89	3	6	FLUOR	75OLS 01
89	17		ITNA	77VOB 01
90			HAA	80HON 01
90		11	HAA	85PIW 01
90	4		HAA	85YAM 01
90	10	7	RTNA	80GAL 02
90	10	7	RTNA	77GIL 03
90	10		RTNA	77BAN 03
90	10		RTNA	78GAL 01
90	10		ITNA	82QUR 01
90	20		ITNA	79PAV 02
90	30		ITNA	78LAU 02
100			ITNA	80CRE 01
100			ITNA	79VOB 01
100	20	7	RTNA	80GAL 02
100	20	9	ITNA	78LAU 02
100	20	6	ITNA	74BEC 01
100	40		NAA	74LEI 01
110	20		RTNA	80SLO 01
110	30		AA	79PAV 02
118	79		HAA	77IHN 03
130	40		RTNA	77MEL 01
140	20		ITNA	74RAN 02
140	90		RTNA	83SIR 01
160			ICPES	84MAR 01
200			ITNA	78CAP 01
1100	170		HAA	74CHU 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
Si (ug/g)				
475.8	12.29		NAA	76GUZ 01
475.8	12.3		ITNA	75PIE 01
480	14		CPXRF	80KIR 01
500	200		14NAA	80FAA 01
600			VV	81NON 01
750			NAA	78GAN 01
1000	160		14NAA	77SEG 01
2080			CPXRF	84KAU 01
2340	60		IENA	79JON 01
2400		11	SSMS	85VOS 01
Sm (ng/g)				
16	3		IENA	81KOS 01
19	4		ITNA	81KOS 01
88	8	5	ITNA	80TOU 01
90			SSMS	78URE 01
90	140	R	ITNA	79IMA 01
92	2		RTNA	86TSU 01
100			ITNA	79KUC 01
100			RTNA	77LAU 02
100		1	IENA	79KUC 01
100		D	RTNA	82LAU 01
100			NAA	77LAU 01
100	30		ITNA	77NAD 02
105	4		RTNA	80SLO 01
110			ITNA	80CRE 01
110	10		ITNA	78LAU 02
110	10		RTNA	83SIR 01
110	30		TCGS	79FAI 01
113	7		RTNA	83TJI 01
114	1		RTNA	84ODD 01
130	40		ITNA	77HAM 01
140		1	IENA	79KUC 01
140			RTNA	72MOR 03
140	40		ITNA	74RAN 02
150	20		VV	81NON 01
150	33		ITNA	85MAD 01
170	30		TCGS	79AND 01
320	120		ITNA	79REN 03

Conc	Uncer	Com	Method	Reference
Sn (ng/g)				
180	10	H	ICPES	82HAH 01
230		11	SSMS	85VOS 01
284	4	5	RTNA	74BYR 01
290	25		RTNA	77BYR 01
304	15	5	RTNA	74BYR 01
340	90		ICPES	80HAA 01
375	25		COLOR	82OMA 01
1750			AF	85NAR 02
4100			RTNA	72BOW 01
Sr (ug/g)				
14.5	2.5		FAA	77FUJ 01
18.1			SSMS	81VER 02
23			OES	75JON 03
26	2		EXRF	85COE 02
28	0.6		PAA	78HIS 01
28	28.3	R	AA	75MAN 01
29.7			CPXRF	84KAU 01
30	6		SSMS	84VOS 01
30.4		6	ICPES	83BRA 02
31		11	SSMS	85VOS 01
31	3.3		CPXRF	80KIR 01
31.3	4.1		XRF	77SMI 04
31.7	4.8		14NAA	77VAN 01
33		11	SSMS	85VOS 01
33	4		SSMS	84VOS 01
33	6		SSMS	84VOS 01
33.1			EXRF	81BIS 01
33.6		6	ICPES	83BRA 02
34	1		FAA	82SUZ 03
34.3	0.5		EXRF	73SPA 01
35			OES	75JON 04
35			NAA	77LAU 01
35	2		EXRF	80DYC 01
35	3	9	ITNA	78LAU 02
35	3		ICPES	79ABE 01
35	5		SSMS	84VOS 01
35.2			ICPES	78DAH 01
35.2	4.9		ITNA	84TU 01
36		6	ICPMS	83DOU 01
36			CPXRF	76ZEI 01
36			CPAA	78MCG 01
36	1		ICPES	85LIE 02
36	6		ITNA	78LAU 02
36.2	2		PAA	74CHA 01
36.3	1.3		EXRF	79GIA 01
36.3	1.8		CPXRF	85CLA 01
36.5	0.3		ICPES	79HER 01
36.5	1		PAA	76KAT 04

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
Sr (ug/g) cont.				
36.5	2		EXRF	77FLO 01
36.5	4		EXRF	75REU 01
36.6	1.2		EXRF	73GIA 01
36.7	6		XRF	78STA 02
37	1		ITNA	79SAT 01
37	1		PAA	76KAT 02
37	1		ICPES	79MCQ 02
37	2		ICPES	79MCQ 01
37.2	0.2		IENA	81KOS 01
37.4	8.3		CPXRF	81ROB 02
37.8		6	ICPES	83BRA 02
37.8	0.1		IENA	85GAU 04
38	5		NAA	78GAN 01
38.7	1.5		ITNA	81KOS 01
39	2		14NAA	81WIL 02
39	3		ICPES	84SOB 01
40			RTNA	72MOR 03
41	3		RTNA	77KUS 01
42.2	4.2		XRF	74REU 01
44.2	2.85		NAA	76GUZ 01
45			OES	75JON 01
45			EXRF	81OHT 01
45	2		ITNA	74RAN 02
45	15		CPAA	77ZIK 01
53	4		14NAA	81WIL 01
118			EXRF	81PAR 01
160		6	ICPMS	83DOU 01
Ta (ng/g)				
5			NAA	77LAU 01
7	2		ITNA	78LAU 02
10			ITNA	80CRE 01
10	3		ITNA	74RAN 02
Tb (ng/g)				
1.23	0.12		ITNA	77NAD 02
9	1		RTNA	80SLO 01
9	2		RTNA	86TSU 01
10	7		RTNA	83SIR 01
12	2		ITNA	78LAU 02
13		D	RTNA	82LAU 01
13			RTNA	77LAU 02
14			ITNA	80CRE 01
15			NAA	77LAU 01
15	2		RTNA	83TJI 01
18	1		ITNA	74RAN 02
72	6		RTNA	84ODD 01
80			SSMS	78URE 01

Conc	Uncer	Com	Method	Reference
Te (ng/g)				
10	3		HAA	85YAM 01
11	3	35	RTNA	75GLA 01
Th (ng/g)				
6.6	0.3		IENA	81KOS 01
6.8	0.4		ITNA	81KOS 01
40	10		RTNA	83SIR 01
44			ITNA	79KUC 01
44		1	IENA	79KUC 01
50	10		RTNA	80SLO 01
52	4		ITNA	78LAU 02
59	13		ITNA	81KUL 01
59	20		ITNA	74RAN 02
60			ITNA	80CRE 01
60			NAA	77LAU 01
63	23		ITNA	85MAD 01
69		1	IENA	79KUC 01
69.8	8.1		RTNA	85JAI 01
85			ITNA	85MIS 01
90	50		VV	81NON 01
Ti (ug/g)				
2.4	0.4		CPAA	77ZIK 01
6.6	0.5		ICPES	79ABE 01
7.6			ICPES	78CAP 01
10.5	0.8		ICPES	85LIE 02
14.2			SSMS	81VER 02
17.2	0.3		COLOR	82KIR 02
17.7	2		SSMS	84VOS 01
18	8.5		EXRF	79GIA 01
19.1		11	SSMS	85VOS 01
19.3		11	SSMS	85VOS 01
21.9	3		CPXRF	85CLA 01
22	2		SSMS	84VOS 01
22	3		SSMS	84VOS 01
23	2.3		SSMS	84VOS 01
24	5		FAA	86GAU 01
26			SSMS	78URE 01
26	3		14NAA	81WIL 01
28.6			CPXRF	84KAU 01
30	4		14NAA	81WIL 02
40			ITNA	78LAU 02
60			NAA	77LAU 01
96	12		PAA	78HIS 01
191	33		ITNA	81HAB 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
Tl (ng/g)				
32		11	ASV	84LIE 01
34		11	ASV	84LIE 01
36		11	FAA	84LIE 01
40	20		FAA	77BRU 01
74			FAA	82HEI 01
200	40		PAA	80SEG 01
300	100		PAA	78HIS 01
Tm (ng/g)				
<	10		RTNA	77LAU 02
<	10	D	RTNA	82LAU 01
3.72	0.23		ITNA	77NAD 02
7	5.5		RTNA	840DD 01
10			SSMS	78URE 01
U (ng/g)				
18	3		IENA	79FAA 01
25	4	35	RTNA	75GLA 01
25	5		PAA	80SEG 01
25.2	1		RTNA	78DER 01
26	3		RTNA	72BEC 03
27	8		ITNA	81KUL 01
27	10		ITNA	85WAH 01
28	2		NT	72BEC 03
28	3	5	RTNA	80AUG 01
28	3		IENA	81KOS 01
29	3	5	RTNA	80AUG 01
30		35	DNA	81GLA 04
30	1		IDMS	72BEC 03
30	4	13	PAA	81SEG 01
30	6	13	PAA	81SEG 01
30.6	0.6	35	DNA	80GLA 04
31	7		DNA	84GLA 11
32	5		ITNA	81KOS 01
32	9		ITNA	74WEA 01
33	2		DNA	84GLA 02
33.6	0.6		DNA	85GAU 04
34.3	0.6		DNA	86GAU 01
56	9	35	DNA	81GLA 03

Conc	Uncer	Com	Method	Reference
V (ng/g)				
140	30	6	ITNA	74HOF 01
248	10	11	RTNA	82HEY 02
300		35	ITNA	81GLA 03
340	20	11	RTNA	72LEV 01
361	90		UU	75WEL 02
370	11		FAA	77MYR 01
377	10		RTNA	80HEY 01
390	980	RD	ITNA	79IMA 03
390	980	R	ITNA	79IMA 01
400	100		ITNA	77ZIK 01
401	16		RTNA	79COR 01
401	16		RTNA	81COR 02
408	16		RTNA	80HEY 01
408	16	11	RTNA	82HEY 02
409	41		RTNA	72DAM 01
410	15		RTNA	80HEY 01
410	15	11	RTNA	82HEY 02
435	20		RTNA	80HEY 01
440	40		RTNA	79BLO 01
440	200		ICPES	85LIE 02
471	14	11	RTNA	78BYR 01
480	28		COLOR	82KIR 01
500	150		RTNA	77GUI 03
530	50	11	ICPES	82JON 01
535			NAA	80KOS 02
535	30	11	RTNA	78BYR 01
540	20	11	ICPES	82JON 01
570	110		ITNA	81HAB 01
570	140	6	ITNA	74HOF 01
580			ITNA	76BAT 01
580	70		ITNA	75RIC 01
580	130		ITNA	77HAM 01
598	32		ITNA	80HEY 01
600	20		RTNA	79BLO 01
600	200		ITNA	78LAU 02
610	23		ITNA	73PIE 01
622	23	11	RTNA	72LEV 01
640	310		UU	75GUI 01
643	129		RTNA	76GUI 01
660		11	SSMS	85VOS 01
680		11	SSMS	85VOS 01
700	100		ITNA	79KOB 03
750	110		VV	81NON 01
800			ITNA	78CAP 01
900	20		ITNA	76GAL 01
2200	100		ICPES	79ABE 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
W (ng/g)				
< 2000		L	RTNA	72MOR 03
16	4		RTNA	80SLO 01
20	7		RTNA	77KUS 01
50	10		RTNA	83SIR 01
Y (ng/g)				
< 1000		L	EXRF	79GIA 01
< 1100		L	14NAA	81WIL 01
< 1100		L	14NAA	81WIL 02
480			SSMS	78URE 01
Yb (ng/g)				
11			RTNA	80SLO 01
20			SSMS	78URE 01
20	2		RTNA	86TSU 01
20	20		RTNA	83SIR 01
21	1		ITNA	77NAD 02
21	2		RTNA	83TJI 01
25			RTNA	77LAU 02
25		D	RTNA	82LAU 01
27	5		RTNA	84ODD 01
29	3		ITNA	81KOS 01
31	1		IENA	81KOS 01
34	3		ITNA	85WAH 01
40			NAA	77LAU 01
Zn (ug/g)				
12			EXRF	82KEE 01
13			OES	75BOL 02
15	3		CPXRF	77CAM 01
17			AA	76KRI 03
17.1	2		EXRF	77FLO 01
18			OES	75JON 09
18	1		ICPES	85LIE 02
19			FAA	83ATS 01
19	4		ICPES	79HER 01
19.8		6	ICPES	83BRA 02
20	3		ITNA	81KUL 01
20	4		ICPES	82AZI 02
20	6		CPAA	77ZIK 01
20.3		11	SSMS	85VOS 01
21	1		ICPES	79ABE 01
21	2		ITNA	75RIC 01
21	7		SSMS	84VOS 01
21.5	1.8		ICPES	82AZI 01
21.7	2.8		ITNA	81HAB 01
22			ITNA	79KUC 01

Conc	Uncer	Com	Method	Reference
Zn (ug/g) cont.				
22			AA	83ELA 01
22	1		EXRF	80DYC 01
22	3.1		CPXRF	80KIR 01
22.5	0.8		AA	76GAL 01
23			AA	73LOO 03
23			AA	84SAT 02
23			AE+AF	79ULL 01
23			OES	75JON 02
23			EXRF	81BIS 01
23			ITNA	78CAP 01
23		11	SSMS	85VOS 01
23	1		RTNA	76MEL 03
23	1		RTNA	77MEL 01
23	1.5		EXRF	85COE 02
23	2	7	RTNA	80GAL 02
23	2.1		XRF	78LIN 01
23	5		SSMS	84VOS 01
23.1			ICPES	78CAP 01
23.1	0.8		RTNA	83DAN 01
23.2	2.2		AA	77BRU 01
23.3	2.7		RTNA	74RAV 01
23.4	1.4	11	ASV	84LOC 01
23.5	0.9	11	ICPES	82JON 01
23.5	1.8		AA	73THO 01
23.7	0.8		EXRF	73GIA 01
23.75			ITNA	82AKA 01
23.9	1.5		ASV	84LOC 01
23.9	3.2		PAA	80YAM 01
24			FAA	73SEG 01
24			AA	81ARA 01
24			FAA	83ATS 01
24		6	ICPES	83CHA 01
24		1	AA	77FRY 01
24	0.4		VV	81NON 01
24	1	7	RTNA	84FAR 02
24	1		RTNA	74ORV 01
24	1	7	RTNA	84FAR 02
24	1	11	AA	78GAI 01
24	1		AA	84GLA 02
24	1.5		FAA	84ROS 01
24	2	11	AA	78GAI 01
24	2	7	RTNA	84FAR 02
24	2		ITNA	85WAH 01
24	3		AA	77YAN 01
24	28	R	AA	75MAN 01
24.2	1.5		NAA	77JER 01
24.2	1.5		PAA	74CHA 01
24.2	2		AA	83RAP 01
24.3	0.3	11	ICPES	82JON 01
24.4	0.9		CPXRF	85CLA 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
Zn (ug/g) cont.				
24.5			CPXRF	84KAU 01
24.5			XRF	78CAM 02
24.5	0.6		RTNA	80SLO 01
24.5	0.8		RTNA	83SIR 01
24.5	3		EXRF	77NIE 01
24.6			RTNA	79BYR 01
24.6	0.9		SSMS	72MAG 01
24.6	2.2	11	ICPES	81MUN 01
24.7			AA	83FAG 01
24.7	1.5		ITNA	84TU 01
24.7	2.2	6	EXRF	79MAT 01
24.8	1.1		ITNA	78GIL 01
24.8	1.9		ITNA	79SAT 01
25			ITNA	80CRE 01
25			ITNA	80SAT 01
25			OES	75JON 03
25			RTNA	72MOR 03
25		6	ICPES	83CHA 01
25			ICPES	81WEI 01
25	1		ICPES	84SOB 01
25	1	11	ICPES	82JON 01
25	1	6	ICPES	85ABD 01
25	1	11	ICPES	82JON 01
25	1		AA	78RIT 01
25	1.6		EXRF	73SPA 01
25	2	9	ITNA	78LAU 02
25	3		FAA	82JEN 02
25	3		ITNA	78LAU 02
25	4		SSMS	84VOS 01
25.07	0.76		NAA	76GUZ 01
25.1	0.7		AF	75EPS 01
25.1	0.8		AA	75EPS 01
25.3			SSMS	81VER 02
25.3	0.5		AA	80AGE 01
25.3	2.1		EXRF	79GIA 01
25.3	2.5	6	EXRF	79MAT 01
25.5		11	AA	79HOE 02
25.5		6	ICPES	83BRA 02
25.5	1.1	6	ITNA	74BEC 01
25.6	3.4		EXRF	75REU 01
25.6	7.64		AA	79MON 01
25.9			FAA	78CAP 01
26			OES	75JON 10
26			OES	75JON 11
26			OES	75JON 05
26			NAA	74BEL 01
26		6	AF	84NAR 02
26		6	AF	84NAR 02
26	1	11	ICPES	82JON 01
26	1	11	ICPES	82JON 01

Conc	Uncer	Com	Method	Reference
Zn (ug/g) cont.				
26	1		ICPES	79MCQ 02
26	1		ICPES	79MCQ 01
26	1.3	11	AA	75ISA 01
26	2	11	ICPES	82JON 01
26	2.1		AA	78LIN 01
26	3		ICPES	80SCH 05
26	3	D	ICPES	80SCH 08
26	3		RTNA	74CAR 03
26	3		EXRF	79KUE 01
26	3.4		ITNA	77HAM 01
26	4		ITNA	76KUC 01
26	4		ICPES	84ABD 01
26	5		AA	75ABU 01
26	14		AA	82HAR 01
26.1	2.2		ITNA	82COR 01
26.3	5		XRF	78STA 02
26.4	1.8		ICPES	83SCH 04
26.7	4.6	6	ITNA	74BEC 01
26.8	1.2		ITNA	81KOS 01
26.9	1.1	11	ASV	84LOC 01
26.9	1.2		RTNA	73TJI 01
27		6	ICPES	85ABD 01
27			OES	75JON 06
27			AA	79HIL 01
27		1	AA	77FRY 01
27			ICPES	78DAH 01
27			NAA	77LAU 01
27	1	11	ICPES	82JON 01
27	2		RTNA	77KUS 01
27	2		RTNA	73GOE 01
27	2	D	RTNA	74GOE 01
27	2		ITNA	83AHM 01
27	2		FAA	74TAL 01
27	2	7	AA	73TAL 01
27	3		PAA	76KAT 02
27	4		PAA	76KAT 04
27	5		SSMS	84VOS 01
27	7		ITNA	77ZIK 01
27.2	2.4		ITNA	74RAN 02
27.3			ICPES	85NAR 02
27.3	2.1		ITNA	82QUR 01
27.3	2.1		ITNA	79AHM 01
27.4	2.7		XRF	74REU 01
27.5		11	AA	79HOE 02
27.6	1.3		CPXRF	81ROB 02
28			OES	75ISA 01
28			ITNA	85MIS 01
28	1	D	DCPES	81REE 01
28	1		DCPES	79REE 01
28	3		FAE	74TAL 01

TABLE 1571-2: INDIVIDUAL DATA FOR NBS SRM 1571 (cont.)

Conc	Uncer	Com	Method	Reference
Zn (ug/g) cont.				
28	3	7	AE+AF	73TAL 01
28	5		FAA	77LOR 01
28.1			CPXRF	75CAM 01
28.3	0.8		ITNA	79KOB 03
28.3	2.6	6	POL	72SIN 01
28.5		6	ICPES	83BRA 02
28.5	0.8		ICPES	81KNA 01
28.6	2.5	11	ICPES	81MUN 01
28.7			AF	85NAR 02
29	0.87	11	AA	75ISA 01
29	1		FAA	79KRA 01
29	2		ITNA	74GUI 01
29	5		NAA	78GAN 01
29	32	RD	ITNA	79IMA 03
29	32	R	ITNA	79IMA 01
29.1	3.7		ICPES	85LYO 01
29.3	2.5		PAA	76WIL 01
29.5		6	AA	72SIN 01
29.6		16	AA	79ABO 01
29.6		16	AA	79ABO 01
29.63	1.8		ITNA	79REN 03
29.8		6	POL	72SIN 01
30			EXRF	81OHT 01
30			ICPES	81GOO 01
30	2	5	ITNA	80TOU 01
30	2		AA	79MCQ 01
30	3		PAA	80SEG 01
30	4		ITNA	78FUR 01
30.5	1.2		RTNA	76GAL 01
31			OES	75JON 04
32			OES	75JON 07
34	3		PAA	78HIS 01
35.6	11.4		XRF	77SMI 04
36.4	7		ITNA	85MAD 01
37			ICPES	84NAD 01
38	6		FAA	77FUJ 01
41			OES	75JON 08
45			XRF	80SUZ 02
56			CPXRF	76ZEI 01
56			CPAA	78MCG 01
77			EXRF	81PAR 01
81			OES	75JON 01

Conc	Uncer	Com	Method	Reference
Zr (ug/g)				
< 3		L	EXRF	79GIA 01
< 5		L	14NAA	81WIL 01
0.4		11	SSMS	85VOS 01
1.3	0.3		PAA	78HIS 01
1.6	0.2	9	ITNA	78LAU 02
1.7	0.44		PAA	84SAT 01
2.1			NAA	77LAU 01
3	1		14NAA	81WIL 02
3.8			CPAA	77ZIK 01
210	20		PAA	74CHA 01

TABLE 1572-1: COMPILED DATA FOR NBS SRM 1572 CITRUS LEAVES (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		OTHER METHODS		
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method
Al	ug/g	92 ± 15	76.5	(2)	---	75 - 78	---		75	(1)	78	(1)	ICPES
As	ug/g	3.1 ± 0.3	3.0 ± 0.3	(4)	2.77	2.7 - 3.38	---		3.0 ± 0.3	(4)	---		
Au	pg/g	---	110	(1)	---	---	---		110	(1)	---		
B	ug/g	---	66.6	(2)	---	64.3 - 69	---		---		69	(1)	ICPES
B	ug/g	---	---		---	---	---		---		64.3	(1)	TCGS
Ba	ug/g	21 ± 3	23.5	(2)	---	23 - 24	23	(1)	---		24	(1)	ICPES
Be	ng/g	---	6.9 ± 0.8	(3)	7.2	6 - 7.6	6	(1)	---		---		
Be	ng/g	---	---		---	---	---		---		7.4	(2)	FAAC
Br	ug/g	8.2	8.36	(1)	---	---	---		8.36	(1)	---		
Ca	%	3.10 ± 0.10	3.13 ± 0.04	(5)	3.14	3.07 - 3.19	3.10	(2)	---		3.13 ± 0.04	(3)	ICPES
Cd	ng/g	37 ± 10	46	(2)	---	37 - 55	55	(1)	37	(1)	---		
Ce	ng/g	280	453	(2)	---	392 - 514	---		453	(2)	---		
Cl	ug/g	414	404	(2)	---	391 - 417	---		417	(1)	391	(1)	TCGS
Co	ng/g	20	16	(1)	---	---	---		16	(1)	---		
Cr	ug/g	0.8 ± 0.2	1	(1)	---	---	1	(1)	---		---		
Cs	ng/g	98	93 ± 16	(3)	85	83 - 111	---		93 ± 16	(3)	---		
Cu	ug/g	16.5 ± 1.0	16 ± 1.0	(6)	15.9	14.6 - 17	16.7 ± 0.6	(3)	14.6	(1)	15	(1)	ICPES
Cu	ug/g	---	---		---	---	---		---		15.9	(1)	HPLC
Dy	ng/g	---	43	(1)	---	---	---		43	(1)	---		
Er	ng/g	---	22	(1)	---	---	---		22	(1)	---		
Eu	ng/g	10	13.5	(2)	---	12 - 15	---		13.5	(2)	---		
F	ug/g	---	4	(1)	---	---	---		---		4	(1)	COLOR
Fe	ug/g	90 ± 10	101 ± 6	(4)	96	95 - 109	96	(2)	---		105.9	(2)	ICPES
Gd	ng/g	---	39	(1)	---	---	---		39	(1)	---		
H	%	---	5.96	(1)	---	---	---		---		5.96	(1)	TCGS
Hg	ng/g	80 ± 20	81 ± 3	(3)	83	77 - 83	83	(1)	80	(2)	---		
Ho	ng/g	---	8	(1)	---	---	---		8	(1)	---		
I	ug/g	1.84 ± 0.03	1.46	(2)	---	1.29 - 1.62	---		1.46	(2)	---		
K	%	1.82 ± 0.06	1.83 ± 0.04	(5)	1.84	1.78 - 1.89	1.79	(2)	---		1.84	(2)	ICPES
K	%	---	---		---	---	---		---		1.89	(1)	TCGS
La	ng/g	190	198	(2)	---	192 - 203	---		198	(2)	---		
Li	ng/g	---	230 ± 105	(3)	190	150 - 350	270	(2)	---		150	(1)	AAC
Lu	ng/g	---	1.55	(2)	---	1.1 - 2	---		1.55	(2)	---		
Mg	ug/g	5800 ± 300	5600 ± 70	(5)	5600	5500 - 5700	5650	(2)	---		5570 ± 60	(3)	ICPES

TABLE 1572-1: COMPILED DATA FOR NBS SRM 1572 CITRUS LEAVES (cont.)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		OTHER METHODS		
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method
Mn	ug/g	23 ± 2	22.9 ± 1.4	(7)	23	21 - 25	24	(2)	23.3	(1)	22.4 ± 1.6	(3)	ICPES
Mn	ug/g	---	---		---	---	---		---		22	(1)	TCGS
Mo	ng/g	170 ± 90	152	(2)	---	150 - 153	---		152	(2)	---		
N	%	2.86	3.62	(1)	---	---	---		---		3.62	(1)	TCGS
Na	ug/g	160 ± 20	163 ± 1	(3)	163	162 - 164	---		163	(1)	163	(2)	ICPES
Nd	ng/g	---	317	(2)	---	202 - 432	---		317	(2)	---		
Ni	ng/g	600 ± 300	715	(2)	---	600 - 830	600	(1)	---		830	(1)	HPLC
P	ug/g	1300 ± 200	1310 ± 20	(3)	1300	1300 - 1332	---		---		1310 ± 20	(3)	ICPES
Pb	ug/g	13.3 ± 2.4	13.4	(2)	---	13.2 - 13.6	13.6	(1)	---		13.2	(1)	HPLC
Pt	pg/g	---	60	(1)	---	---	---		60	(1)	---		
Rb	ug/g	4.84 ± 0.06	---		---	---	---		---		---		
S	ug/g	4070 ± 90	4080 ± 180	(7)	4066	3822 - 4400	---		---		3822	(1)	ICPES
S	ug/g	---	---		---	---	---		---		4070 ± 90	(4)	CB
S	ug/g	---	---		---	---	---		---		4400	(1)	TCGS
S	ug/g	---	---		---	---	---		---		4066	(1)	IDMS
S-32/34	ratio	---	22.6310	(1)	---	---	---		---		22.6310	(1)	IDMS
S-33/34	ratio	---	0.1781	(1)	---	---	---		---		0.1781	(1)	IDMS
Sb	ng/g	40	34	(1)	---	---	---		34	(1)	---		
Sc	ng/g	10	10.4 ± 0.5	(3)	10.2	10 - 11	---		10.4 ± 0.5	(3)	---		
Se	ng/g	25	---		---	---	---		---		---		
Si	%	---	0.19	(1)	---	---	---		---		0.19	(1)	TCGS
Sm	ng/g	52	50	(2)	---	49 - 52	---		50	(2)	---		
Sn	ng/g	240	---		---	---	---		---		---		
Sr	ug/g	100 ± 2	98 ± 3	(5)	99.3	93 - 102	100	(2)	93	(1)	99.3	(1)	CPAA
Sr	ug/g	---	---		---	---	---		---		101	(1)	IDNAA
Tb	ng/g	---	9	(2)	---	9 - 9	---		9	(2)	---		
Te	ng/g	20	---		---	---	---		---		---		
Ti	ug/g	---	22	(1)	---	---	22	(1)	---		---		
Tl	ng/g	< 10	---		---	---	---		---		---		
U	ng/g	< 150	40 ± 2	(3)	41	37 - 41	---		40 ± 2	(3)	---		
V	ng/g	---	240	(2)	---	235 - 245	---		235	(1)	245	(1)	IDMS
W	ng/g	---	8.1	(1)	---	---	---		8.1	(1)	---		
Yb	ng/g	---	11.5	(2)	---	8 - 15	---		11.5	(2)	---		
Zn	ug/g	29 ± 2	29.9 ± 1.4	(6)	29.7	28 - 31.8	30.5	(2)	---		29.6 ± 2.0	(3)	ICPES
Zn	ug/g	---	---		---	---	---		---		29.7	(1)	HPLC

TABLE 1572-2: INDIVIDUAL DATA FOR NBS SRM 1572 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (ug/g)				
75	2		IENA	85GLA 02
78	12		ICPES	85ISS 01
As (ug/g)				
2.7	0.3		RTNA	85GAU 04
2.77	0.2		RTNA	86GAU 01
3.2	0.06		RTNA	84GLA 11
3.38	0.05		RTNA	84BYR 02
Au (pg/g)				
110	8		RTNA	82ZEI 01
B (ug/g)				
64.3	0.6		TCGS	83AND 01
69	0.3		ICPES	84PRI 01
Ba (ug/g)				
23	6		FAA	86GAU 01
24	1		ICPES	85WHI 02
Be (ng/g)				
6	0.4		FAA	86GAU 01
7.2			FAAC	86GAU 01
7.6	1.6		FAAC	85GAU 04
Br (ug/g)				
8.36			ITNA	86GAU 01
Ca (%)				
3.07	0.0055	11	AA	75ISA 01
3.12	0.25		ICPES	85ISS 01
3.14	0.0053	11	AA	75ISA 01
3.15	0.29		ICPES	85LYO 01
3.19	0.03		ICPES	85WHI 02
3.47	0.05		TCGS	83AND 01
Cd (ng/g)				
37	3		RTNA	84BYR 02
55	3		AA	86GAU 01

Conc	Uncer	Com	Method	Reference
Ce (ng/g)				
392	53		RTNA	83TJI 01
514	79		RTNA	86TSU 01
Cl (ug/g)				
391	6		TCGS	83AND 01
417			ITNA	86GAU 01
Co (ng/g)				
16	1		RTNA	84BYR 02
Cr (ug/g)				
1	0.5		FAA	85GAU 04
Cs (ng/g)				
83			ITNA	86GAU 01
85	6		ITNA	84GLA 11
111	25		ITNA	85GAU 04
Cu (ug/g)				
14.6	0.3		RTNA	84BYR 02
15	1.8		ICPES	85ISS 01
15.9	0.2		HPLC	85ICH 01
16	0.56	11	AA	75ISA 01
17	0.14	11	AA	75ISA 01
17	4		AA	86GAU 01
Dy (ng/g)				
43	7		RTNA	86TSU 01
Er (ng/g)				
22	3		RTNA	86TSU 01
Eu (ng/g)				
12	0.2		RTNA	83TJI 01
15	1		RTNA	86TSU 01
F (ug/g)				
4			COLOR	83JAC 01

TABLE 1572-2: INDIVIDUAL DATA FOR NBS SRM 1572 (cont.)

Conc	Uncer	Com	Method	Reference
Fe (ug/g)				
95	7.6	11	AA	75ISA 01
96	8.6	11	AA	75ISA 01
102.8	10.5		ICPES	85LYO 01
109	8		ICPES	85ISS 01
Gd (ng/g)				
39	6		RTNA	86TSU 01
H (%)				
5.96	0.01		TCGS	83AND 01
Hg (ng/g)				
77	3		RTNA	84DEL 01
83	2		RTNA	84BYR 02
83	3		CVAA	86GAU 01
Ho (ng/g)				
8	1		RTNA	86TSU 01
I (ug/g)				
1.29	0.05		IENA	84FAR 01
1.62	0.08		RTNA	84BYR 02
K (%)				
1.78	0.0004	11	AA	75ISA 01
1.8	0.0011	11	AA	75ISA 01
1.84	0.03		ICPES	85WHI 02
1.84	0.11		ICPES	85ISS 01
1.889	0.007		TCGS	83AND 01
La (ng/g)				
192	28		RTNA	86TSU 01
203	16		RTNA	83TJI 01
Li (ng/g)				
150	20		AAC	85GAU 04
190	10		AA	86GAU 01
350	50		AA	85GAU 04
Lu (ng/g)				
1.1	0.1		RTNA	83TJI 01
2	0.4		RTNA	86TSU 01

Conc	Uncer	Com	Method	Reference
Mg (ug/g)				
5180	270		AA	86GAU 01
5500	300		ICPES	85LYO 01
5600	1.7	11	AA	75ISA 01
5600	100		ICPES	85WHI 02
5600	600		ICPES	85ISS 01
5700	3	11	AA	75ISA 01
Mn (ug/g)				
21	1		ICPES	85WHI 02
22	3		ICPES	85ISS 01
22	6		TCGS	83AND 01
23	0.12	11	AA	75ISA 01
23.3	0.7		RTNA	84BYR 02
24.1	1.9		ICPES	85LYO 01
25	0.5	11	AA	75ISA 01
Mo (ng/g)				
150	15		RTNA	84BYR 02
153	16		RTNA	84BYR 01
N (%)				
3.62	0.04		TCGS	83AND 01
Na (ug/g)				
162	15		ICPES	85ISS 01
163			ITNA	86GAU 01
164	13		ICPES	85WHI 02
Nd (ng/g)				
202	28		RTNA	86TSU 01
432	73		RTNA	83TJI 01
Ni (ng/g)				
600	50		FAA	86GAU 01
830	190		HPLC	85ICH 01
P (ug/g)				
1300			ICPES	85WHI 02
1300	100		ICPES	85ISS 01
1332	11		ICPES	84PRI 01
1800	100		ICPES	85LYO 01

TABLE 1572-2: INDIVIDUAL DATA FOR NBS SRM 1572 (cont.)

Conc	Uncer	Com	Method	Reference
Pb (ug/g)				
13.2	0.5		HPLC	85ICH 01
13.6	1.1		FAA	85GAU 04
Pt (pg/g)				
60	30		RTNA	82ZEI 01
S (ug/g)				
3600			TURB	84JAC 01
3822	58		ICPES	84PRI 01
3990	90		CB	86BOW 01
4000	300		CB	84GLA 11
4066	22		IDMS	84KEL 01
4140		D	CB	85JAC 01
4140	100	6	CB	84JAC 01
4160		D	CB	85JAC 01
4160	70	6	CB	84JAC 01
4400	200		TCGS	83AND 01
4590	70		ICPES	85WHI 02
S-32/34 (ratio)				
22.631			IDMS	84KEL 01
S-33/34 (ratio)				
0.1781			IDMS	84KEL 01
Sb (ng/g)				
34	1		RTNA	84BYR 02
Sc (ng/g)				
10	3		ITNA	86GAU 01
10.2	1.1		ITNA	84GLA 11
11			ITNA	85GAU 04
Si (%)				
0.19	0.06		TCGS	83AND 01
Sm (ng/g)				
49	4		RTNA	83TJI 01
52	8		RTNA	86TSU 01
Sr (ug/g)				
93	5		IENA	85GAU 04
97	1		AA	85GAU 04
99.3	3.5		CPAA	85MAS 01
100.6	2.6		IDNAA	85YAG 01
102	1		AA	86GAU 01
Tb (ng/g)				
9	2		RTNA	86TSU 01
9	2		RTNA	83TJI 01
Ti (ug/g)				
22	1		FAA	86GAU 01
U (ng/g)				
37	5		DNA	85GAU 04
41			DNA	84GLA 02
41	5		DNA	86GAU 01
V (ng/g)				
235	14		RTNA	84BYR 02
245	5		IDMS	85FAS 02
W (ng/g)				
8.1	0.5		RTNA	84BYR 01
Yb (ng/g)				
8	1		RTNA	83TJI 01
15	3		RTNA	86TSU 01
Zn (ug/g)				
28	1		ICPES	85WHI 02
29	4		ICPES	85ISS 01
29.7	0.5		HPLC	85ICH 01
30	1.5	11	AA	75ISA 01
31	0.62	11	AA	75ISA 01
31.8	4.1		ICPES	85LYO 01

TABLE 1573-1: COMPILED DATA FOR NBS SRM 1573 TOMATO LEAVES (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		OTHER METHODS					
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method	Mean ± SD	(n)	Method
Ag	ng/g	---	180	(1)	---	---	---		180	(1)	---			---		
Al	ug/g	1200	1000 ± 300	(10)	1160	628 - 1300	1250	(1)	1268 ± 39	(3)	850 ± 300	(5)	ICPES	427	(2)	COLOR
As	ng/g	270 ± 50	253 ± 36	(24)	260	170 - 310	262 ± 37	(13)	231 ± 30	(8)	270	(1)	ICPES	290	(1)	COLOR
As	ng/g	---	---		---	---	---		---		---			270	(1)	MPOES
Au	ng/g	---	0.8	(1)	---	---	---		0.8	(1)	---			---		
B	ug/g	30	33 ± 4	(18)	34	25.5 - 38	---		---		34 ± 5	(5)	ICPES	34 ± 2	(3)	TCGS
B	ug/g	---	---		---	---	---		---		33 ± 5	(11)	OES	---		
Ba	ug/g	---	57 ± 9	(10)	58	40 - 69	---		63 ± 6	(3)	64.7	(2)	ICPES	---		
Be	ng/g	---	32	(2)	---	26 - 38	---		---		26	(1)	ICPES	38	(1)	FAAC
Br	ug/g	26	21 ± 2	(11)	21	19 - 25.31	---		22 ± 2	(10)	20.3	(1)	XRF	---		
C	%	---	37.78 ± 0.12	(3)	37.8	37.67 - 37.92	---		---		37.80 ± 0.12	(3)	CB	---		
Ca	%	3.00 ± 0.03	2.83 ± 0.23	(31)	2.88	2.38 - 3.28	2.84 ± 0.06	(4)	2.7 ± 0.4	(3)	2.97 ± 0.08	(10)	ICPES	2.76 ± 0.14	(3)	XRF
Cd	ug/g	3	2.5 ± 0.2	(28)	2.55	2.1 - 3	2.5 ± 0.3	(13)	2.7	(1)	2.58 ± 0.20	(9)	ICPES	2.65 ± 0.13	(3)	ASV
Cd	ug/g	---	---		---	---	---		---		---			2.25	(2)	POL
Ce	ug/g	1.6	1.3 ± 0.2	(4)	1.28	1 - 1.56	---		1.3 ± 0.2	(4)	---			---		
Cl	%	---	1.07 ± 0.03	(4)	1.05	1.04 - 1.10	---		1.07 ± 0.03	(4)	---			---		
Co	ng/g	600	525 ± 46	(7)	510	467 - 610	518 ± 28	(3)	531 ± 60	(4)	---			---		
Cr	ug/g	4.5 ± 0.5	4.0 ± 0.5	(19)	3.9	3 - 4.6	4.3 ± 0.3	(7)	3.8 ± 0.5	(5)	3.6 ± 0.9	(5)	ICPES	4.15	(2)	XRF
Cs	ng/g	---	57 ± 8	(7)	56	43 - 70	---		57 ± 8	(7)	---			---		
Cu	ug/g	11 ± 1	11 ± 2	(51)	10.81	6.9 - 15	11.6 ± 0.9	(12)	11 ± 3	(7)	9.6 ± 0.8	(11)	ICPES	9 ± 3	(3)	XRF
Cu	ug/g	---	---		---	---	---		---		---			11	(2)	AF
Cu	ug/g	---	---		---	---	---		---		7.7	(2)	POL	10.6	(1)	IDMS
Cu	ug/g	---	---		---	---	---		---		11	(1)	CPAA	10.8	(2)	COLOR
Dy	ng/g	---	68	(1)	---	---	---		68	(1)	---			---		
Er	ng/g	---	51	(1)	---	---	---		51	(1)	---			---		
Eu	ng/g	40	22 ± 6	(5)	25	15 - 27	---		22 ± 6	(5)	---			---		

TABLE 1573-1: COMPILED DATA FOR NBS SRM 1573 TOMATO LEAVES (cont.)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		OTHER METHODS					
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method	Mean ± SD	(n)	Method
F	ug/g	---	5.5 ± 0.4	(4)	5.4	5 - 6	---		---		5.7 ± 0.3	(3)	ISE	5	(1)	MS
Fe	ug/g	690 ± 25	580 ± 110	(43)	604	340 - 706	585 ± 115	(8)	628 ± 97	(7)	620 ± 50	(11)	ICPES	586	(2)	XRF
Fe	ug/g	---	---		---	---	---		---		592 ± 15	(3)	COLOR	698	(1)	VOLT
Fe	ug/g	---	---		---	---	---		---		675.8	(1)	CPAA	650	(2)	AF
Fe(II)	ug/g	---	540	(1)	---	---	---		---		540	(1)	VOLT	---		
Fe(III)	ug/g	---	158	(1)	---	---	---		---		158	(1)	VOLT	---		
Ga	ng/g	---	76.15	(2)	---	69.3 - 83	83	(1)	69.3	(1)	---			---		
Gd	ng/g	---	75	(2)	---	74 - 76	---		75	(2)	---			---		
H	%	---	5.08 ± 0.07	(3)	5.1	5.00 - 5.14	---		---		5.12	(2)	CB	5	(1)	TCGS
Hf	ng/g	---	250	(1)	---	---	---		250	(1)	---			---		
Hg	ng/g	100	103 ± 22	(3)	91	90 - 128	91	(1)	109	(2)	---			---		
Ho	ng/g	---	13	(1)	---	---	---		13	(1)	---			---		
I	ng/g	---	323 ± 58	(3)	300	280 - 390	---		335	(2)	300	(1)	PAA	---		
In	ng/g	---	0.96	(1)	---	---	---		0.96	(1)	---			---		
K	%	4.46 ± 0.03	4.44 ± 0.24	(28)	4.4	3.85 - 4.81	4.49 ± 0.31	(6)	4.34 ± 0.16	(5)	4.41 ± 0.10	(7)	ICPES	4.59	(2)	XRF
La	ng/g	900	710 ± 70	(6)	677	630 - 800	---		710 ± 70	(6)	---			---		
Lu	ng/g	---	9.3 ± 2.5	(3)	9	7 - 12	---		9.3 ± 2.5	(3)	---			---		
Mg	ug/g	7000	6850 ± 330	(25)	6800	6100 - 7400	6850 ± 170	(4)	6650	(2)	6740 ± 180	(10)	ICPES	---		
Mn	ug/g	238 ± 7	224 ± 13	(43)	226	197 - 252	224 ± 10	(11)	225 ± 24	(6)	227 ± 8	(12)	ICPES	235	(1)	NM
Mn	ug/g	---	---		---	---	---		---		230 ± 34	(3)	XRF	228	(2)	AF
Mo	ug/g	---	0.53 ± 0.09	(6)	0.5	0.4 - 0.65	---		0.64	(2)	0.48 ± 0.05	(4)	ICPES	---		
N	%	5	4.93 ± 0.03	(3)	4.94	4.9 - 4.95	---		---		4.94	(2)	CB	4.9	(1)	TCGS
Na	ug/g	---	470 ± 110	(19)	500	326 - 650	440 ± 130	(4)	515 ± 62	(5)	420 ± 110	(5)	ICPES	---		
Nd	ng/g	---	620 ± 70	(3)	580	566 - 700	---		620 ± 70	(3)	---			---		
Ni	ug/g	---	1.3 ± 0.2	(7)	1.2	1.1 - 1.7	---		1.2	(1)	1.3 ± 0.2	(6)	ICPES	---		

TABLE 1573-1: COMPILED DATA FOR NBS SRM 1573 TOMATO LEAVES (cont.)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		OTHER METHODS					
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method	Mean ± SD	(n)	Method
P	ug/g	3400 ± 200	3370 ± 220	(28)	3318	2800 - 3900	3350 ± 130	(4)	3420	(1)	3430 ± 210	(13)	ICPES	3400	(1)	CPAA
Pb	ug/g	6.3 ± 0.3	5.9 ± 0.8	(41)	6	4 - 8.1	5.9 ± 0.4	(27)	---		6.8 ± 1.9	(6)	ICPES	5.9	(1)	XRF
Pb	ug/g	---	---		---	---	---		---		6.03	(1)	IDMS	6.23	(1)	CPAA
Pb	ug/g	---	---		---	---	---		---		5.5 ± 1.1	(4)	ASV	3.85	(2)	POL
Pd	ng/g	---	< 2		---	---	---		< 2		---			---		
Pr	ng/g	---	187	(2)	---	184 - 190	---		187	(2)	---			---		
Rb	ug/g	16.5 ± 0.1	17.3 ± 2.5	(7)	16.5	15.16 - 22	---		17 ± 2	(6)	19.2	(1)	XRF	---		
S	ug/g	---	6200 ± 400	(8)	5960	5500 - 6900	---		---		6374	(2)	ICPES	5960	(1)	XRF
S	ug/g	---	---		---	---	---		---		6100 ± 400	(5)	CB	---		
Sb	ng/g	---	36 ± 7	(5)	34	30 - 46	34	(1)	36 ± 8	(4)	---			---		
Sc	ng/g	130	173 ± 26	(9)	170	138 - 220	---		173 ± 26	(9)	---			---		
Se	ng/g	---	54 ± 6	(4)	50	49 - 61	---		49.5	(2)	59	(2)	GC	---		
Si	ug/g	---	3000	(1)	---	---	---		---		3000	(1)	ICPES	---		
Sm	ng/g	---	92 ± 16	(3)	86	81 - 110	---		92 ± 16	(3)	---			---		
Sr	ug/g	44.9 ± 0.3	42 ± 5	(12)	43.7	35.6 - 54	42.95	(2)	49 ± 15	(3)	36	(1)	ICPES	44	(1)	XRF
Sr	ug/g	---	---		---	---	---		---		45.3	(1)	IDNAA	43.85	(2)	CPAA
Ta	ng/g	---	430	(1)	---	---	---		430	(1)	---			---		
Tb	ng/g	---	9 ± 5	(3)	12	4 - 12	---		9 ± 5	(3)	---			---		
Th	ng/g	170 ± 30	205	(2)	---	190 - 220	---		205	(2)	---			---		
Ti	ug/g	---	56 ± 39	(3)	68	12.6 - 89	---		68	(1)	12.6	(1)	ICPES	89	(1)	COLOR
Tl	ng/g	50	22	(2)	---	20 - 24	---		---		22	(2)	ASV	---		
U	ng/g	61 ± 3	59 ± 6	(6)	60	50.2 - 63	---		59 ± 6	(6)	---			---		
V	ug/g	---	1.2 ± 0.2	(8)	1.27	0.87 - 1.5	---		1.1 ± 0.2	(5)	1.37 ± 0.16	(3)	ICPES	---		
W	ng/g	---	< 40		---	---	---		< 40		---			---		
Yb	ng/g	---	63 ± 16	(3)	63	47 - 80	---		63 ± 16	(3)	---			---		
Zn	ug/g	62 ± 6	61 ± 4	(45)	61	52 - 71	62 ± 5	(11)	61 ± 5	(5)	61 ± 4	(16)	ICPES	62.5	(1)	CPAA
Zn	ug/g	---	---		---	---	---		---		59	(2)	AF	62.9	(2)	POL
Zn	ug/g	---	---		---	---	---		---		65 ± 9	(3)	XRF	---		

TABLE 1573-2: INDIVIDUAL DATA FOR NBS SRM 1573 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ag (ng/g)				
180	50		RTNA	80SLO 01
Al (ug/g)				
182			OES	75JON 02
228			OES	75JON 11
280			OES	75JON 07
286			OES	75JON 08
296			OES	75JON 06
321	37	11	ICPES	81MUN 01
356			OES	75JON 03
382			OES	75JON 04
391			OES	75JON 09
417.4	8.3	6	COLOR	85BAR 01
436.3	11.5	6	COLOR	85BAR 01
495			OES	75JON 05
628			ICPES	81GOO 01
639	21		ICPES	83SCH 03
661	18	11	ICPES	81MUN 01
835			OES	75JON 01
1160			ICPES	84NAD 01
1170	60	11	ICPES	82JON 01
1225	239		ITNA	77NAD 02
1250	200		AA	83RAP 01
1280			ITNA	82GLA 02
1300	80		ITNA	80SLO 01
As (ng/g)				
118	10	7	FAA	82HOE 02
170	10	7	FAA	82HOE 02
180	40		ITNA	85NDI 01
200	40		RTNA	80SLO 01
225	3		RTNA	79HOE 01
230	30	7	RTNA	80GAL 02
230	30	11	HAA	81RAP 01
240			IENA	84GLA 02
240	25		RTNA	85GAU 04
245	5	7	FAA	82HOE 02
250	30		HAA	81KNA 01
250	30	11	HAA	81RAP 01
260			HAA	81ARA 01
260	30		ITNA	77NAD 02
260	30	11	HAA	81RAP 01
260	80		HAA	81YAN 01
270		H	ICPES	81PIC 01
270	40		RTNA	86GAU 01
270	50		MPOES	83SAR 01
290	10		AA	83RAP 01
290	10		COLOR	77BUR 01
As (ng/g) cont.				
290	10	11	HAA	82JON 01
290	20	11	HAA	82JON 01
300	30		FAA	80DUP 01
310	10		HAA	80TAM 01
330	30		IENA	82GLA 02
Au (ng/g)				
0.8	0.1		RTNA	80SLO 01
B (ug/g)				
25.5	1.1		ICPES	79HER 01
26			OES	75JON 10
28			OES	75JON 02
29			OES	75JON 07
30			OES	75JON 04
32			OES	75JON 03
32			OES	75JON 01
32			OES	75JON 06
32	3	35	TCGS	81GLA 04
34	2.8	11	ICPES	81MUN 01
35			OES	75JON 09
35	4		TCGS	84GLA 11
35.5			ICPES	81GOO 01
36	3		TCGS	82GLA 02
36.1	1.5	11	ICPES	81MUN 01
37			OES	75JON 08
37			OES	75JON 05
38	0.1		ICPES	84PRI 01
42			OES	75JON 11
Ba (ug/g)				
40			OES	75JON 03
47			OES	75JON 04
49			OES	75JON 11
56.5	11.24		NAA	76GUZ 01
58			OES	75JON 05
59			OES	75JON 01
63	5		ITNA	77NAD 02
63.4			ICPES	84NAD 01
66	3		ICPES	85WHI 02
69	14		ITNA	79REN 03
Be (ng/g)				
26	10		ICPES	83SCH 03
38	4		FAAC	85GAU 04

TABLE 1573-2: INDIVIDUAL DATA FOR NBS SRM 1573 (cont.)

Conc	Uncer	Com	Method	Reference
Br (ug/g)				
19	1.5	5	ITNA	80HOE 01
19.8	0.6	5	IENA	79GLA 02
20.1	1.2	5	ITNA	80HOE 01
20.3	1.1		CPXRF	84BIS 01
20.8	2.4		ITNA	80SLO 01
21	1.2	5	IENA	79GLA 02
21	3		ITNA	79REN 03
21.9	0.2		ITNA	77NAD 02
22.5			ITNA	85GAU 04
24.6			ITNA	86GAU 01
25.31	1		ITNA	77STE 02
29	2	35	NAA	81GLA 03
54			EXRF	81PAR 01
C (%)				
37.67	0.45		CB	82GLA 02
37.8	0.9		CB	77WAT 02
37.92	0.26		CB	80SCH 02
Ca (%)				
2.22	0.08		ITNA	80SLO 01
2.38			OES	75JON 04
2.4	0.07		ITNA	79REN 03
2.42			OES	75JON 07
2.43			OES	75JON 03
2.55			OES	75JON 02
2.62			OES	75JON 08
2.64			OES	75JON 10
2.65	0.07	6	EXRF	79MAT 01
2.7	0.02		CPXRF	84BIS 01
2.70	0.21		NAA	76GUZ 01
2.75	0.005	11	AA	75ISA 01
2.8			OES	75JON 11
2.85			ICPES	81GOO 01
2.86	0.05	11	AA	84SUZ 03
2.87	0.005	11	AA	75ISA 01
2.88	0.27		ICPES	85LYO 01
2.9	0.05	11	AA	84SUZ 03
2.91			OES	75JON 05
2.91	0.08		ICPES	85WHI 02
2.92			OES	75JON 09
2.92	0.08	6	EXRF	79MAT 01
2.92	0.12	11	ICPES	81MUN 01
2.93	0.045		ICPES	83SCH 03
2.99	0.05	11	ICPES	82JON 01
2.99	0.12	11	ICPES	81MUN 01
3.04	0.05	11	ICPES	82JON 01
3.08	0.05	11	ICPES	82JON 01
Ca (%) cont.				
3.1			ITNA	82GLA 02
3.1	0.03	11	ICPES	82JON 01
3.19			OES	75JON 06
3.28			OES	75JON 01
3.41	0.09		ICPES	79HER 01
3.49	0.12		ITNA	77NAD 02
3.55			ICPES	84NAD 01
5.82			EXRF	81PAR 01
Cd (ug/g)				
1.6		11	FAA	80PRE 01
2.1		6	POL	72SIN 01
2.2		11	FAA	80PRE 01
2.3		11	FAA	80PRE 01
2.3			FAA	80PRE 01
2.3		11	FAA	80PRE 01
2.3			ICPES	84NAD 01
2.3		11	FAA	80PRE 01
2.3	0.1		FAA	80LEG 01
2.4	0.01	11	ICPES	82JON 01
2.4	0.22	6	POL	72SIN 01
2.5			FAA	82PRE 01
2.5			ASV	82GAJ 01
2.5	0.1		ICPES	83SCH 03
2.55	0.09	11	ICPES	82JON 01
2.56	0.06	11	ICPES	82JON 01
2.6	0.1	11	ICPES	82JON 01
2.6	0.2		FAA	84GLA 11
2.6	0.3	11	ICPES	81MUN 01
2.66	0.1		FAA	83DEL 01
2.7			ASV	74COP 01
2.7	0.4		RTNA	80SLO 01
2.7	0.5	11	ICPES	81MUN 01
2.74	0.2		ASV	82SAT 02
2.8	0.2		AA	80SCH 05
2.8	0.2		FAA	84GLA 02
2.8	0.2	D	FAA	80SCH 08
2.9	0.1		FAA	81KNA 01
2.94	0.15		AA	83RAP 01
3	0.16		ICPES	83SCH 04
3.3	0.2		ICPES	79HER 01
Ce (ug/g)				
1	0.1		RTNA	80SLO 01
1.28	0.18		ITNA	86KRA 01
1.3	0.36		RTNA	83TJI 01
1.559	0.114		RTNA	86TSU 01

TABLE 1573-2: INDIVIDUAL DATA FOR NBS SRM 1573 (cont.)

Conc	Uncer	Com	Method	Reference
Cl (%)				
1.04	0.02		ITNA	80SLO 01
1.05	0.0725		ITNA	77STE 02
1.085	0.1201		NAA	76GUZ 01
1.1	0.07		ITNA	77NAD 02
Co (ng/g)				
400	106		NAA	76GUZ 01
467	25		ITNA	77GUZ 01
495			FAA	82HOE 01
507	20		ITNA	86KRA 01
510	10	11	FAA	80FUD 01
540	30		RTNA	80SLO 01
550	10	11	FAA	80FUD 01
610	30		ITNA	77NAD 02
680	30		ITNA	79REN 03
Cr (ug/g)				
1.5	0.2	11	ICPES	81MUN 01
2.28	0.06	11	ICPES	82JON 01
2.5	0.2	11	ICPES	81MUN 01
3			ICPES	81GOO 01
3.1		11	AA	79HOE 02
3.107	1.08		NAA	76GUZ 01
3.7	0.3		ITNA	82GLA 02
3.8	0.2	11	ICPES	82JON 01
3.8	0.3	35	FAA	81GLA 03
3.8	0.61		ITNA	85NDI 01
3.9	0.3		ITNA	77NAD 02
3.9	1.1	11	CPXRF	84SIM 01
3.94		11	AA	79HOE 02
4.3			FAA	82HOE 01
4.3			AA	81ARA 01
4.3	0.2		AA	83RAP 01
4.3	0.5		ICPES	83SCH 03
4.4	0.2	11	CPXRF	84SIM 01
4.4	0.2	D	CPXRF	84SIM 02
4.5	1.6		ITNA	79REN 03
4.53			ICPES	84NAD 01
4.6		11	AA	79HOE 02
4.6	0.7		FAA	85GAU 04
5.15	0.29		ITNA	86KRA 01
5.9	0.2		ICPES	79HER 01

Conc	Uncer	Com	Method	Reference
Cs (ng/g)				
43	2		ITNA	77NAD 02
54	4		ITNA	84GLA 02
56			ITNA	86GAU 01
56	6		ITNA	77GUZ 01
58	4		ITNA	84GLA 11
64	21		ITNA	86KRA 01
70	8		ITNA	85GAU 04
140	30		ITNA	79REN 03
Cu (ug/g)				
3			AA	81ARA 01
6.1	1.1		ITNA	85NDI 01
6.9	0.7		CPXRF	84BIS 01
7.3	0.7		XRF	85AVA 01
7.7		6	POL	72SIN 01
7.7	0.5	6	POL	72SIN 01
8			ICPES	81GOO 01
8.2	0.4	11	ICPES	82JON 01
8.7	1.9		AA	84KAN 01
9			OES	75JON 02
9.4		6	NAA	72SIN 01
9.4	0.5	11	ICPES	81MUN 01
9.5	0.2	11	ICPES	82JON 01
9.5	0.3	11	ICPES	81MUN 01
9.7	0.3		ICPES	83SCH 03
9.8	0.3		ICPES	83SCH 04
9.8	0.4	11	ICPES	82JON 01
10			OES	75JON 03
10.1	0.4		RTNA	74RAV 01
10.4	0.2		ICPES	79HER 01
10.4	0.5	11	ICPES	82JON 01
10.4	0.6		VV	80SCH 05
10.5	0.8		RTNA	80SLO 01
10.6	0.1		IDMS	84BRO 03
10.6	0.5		AA	83RAP 01
10.7	0.4		ICPES	80SCH 08
10.8	0.1		COLOR	76ZAN 02
10.81	0.02		COLOR	77BUR 01
10.9	0.1	D	AA	76ZAN 02
10.9	0.1		AA	76ZAN 01
11			FAA	83ATS 01
11			OES	75JON 04
11	1	11	AA	84SUZ 03
11	1	6	AF	83MCC 02
11	2	6	AF	83MCC 02
11	2.4		CPAA	85CAN 01
11.1	0.2	7	RTNA	80GAL 02
11.2		11	AA	79HOE 02
11.2	0.2		AA	85KOJ 01

TABLE 1573-2: INDIVIDUAL DATA FOR NBS SRM 1573 (cont.)

Conc	Uncer	Com	Method	Reference
Cu (ug/g) cont.				
11.5	0.2		AA	76EPS 02
12		11	AA	79HOE 02
12	0.14	11	AA	75ISA 01
12	0.17	11	AA	75ISA 01
12.2	1.3	6	EXRF	79MAT 01
13			OES	75JON 10
13	0.7	11	AA	84SUZ 03
13.5	0.4		AA	77GUZ 01
14.1	1.3		ITNA	77GUZ 01
14.1	5.64		NAA	76GUZ 01
15			OES	75JON 09
15			OES	75JON 01
15			OES	75JON 11
15			OES	75JON 06
15	3		AA	86GAU 01
17			OES	75JON 05
17			OES	75JON 08
20			OES	75JON 07
25			EXRF	81PAR 01
Dy (ng/g)				
68	4		RTNA	86TSU 01
Er (ng/g)				
51	3		RTNA	86TSU 01
Eu (ng/g)				
15	2		ITNA	77GUZ 01
16	3		RTNA	83TJI 01
25	5		ITNA	77NAD 02
26	1		RTNA	86TSU 01
27	7		ITNA	86KRA 01
55	8		RTNA	80SLO 01
F (ug/g)				
5	1		MS	77STE 02
5.4	1.3		ISE	85GAU 04
5.7	0.2		ISE	83KNA 01
6	0.7		ISE	84GLA 02
9			COLOR	83JAC 01

Conc	Uncer	Com	Method	Reference
Fe (ug/g)				
55			OES	75JON 01
162			OES	75JON 09
207	6.3	11	AA	84SUZ 03
220			AA	81ARA 01
266			OES	75JON 06
267			OES	75JON 03
340			OES	75JON 02
342			OES	75JON 04
350			OES	75JON 11
361	50	11	ICPES	81MUN 01
379			OES	75JON 08
442	115	11	AA	75ISA 01
450	17	11	AA	84SUZ 03
463	157	11	AA	75ISA 01
469.25	118.3		NAA	76GUZ 01
478			OES	75JON 05
507.6	14.3		ITNA	77GUZ 01
531	14	11	ICPES	82JON 01
534			OES	75JON 10
546	19		ICPES	83SCH 03
550	36		CPXRF	84BIS 01
552			OES	75JON 07
568	3		ICPES	79HER 01
575	10	11	COLOR	82SCH 03
597		11	COLOR	82SCH 03
602	28	6	FAA	84FUD 02
604	11	11	COLOR	82SCH 03
614	14	6	AF	83MCC 02
623	10	6	EXRF	79MAT 01
625	14	11	ICPES	82JON 01
632			ICPES	81GOO 01
636	65		ICPES	85LYO 01
642	17	11	ICPES	82JON 01
657			ICPES	84NAD 01
658	18	11	ICPES	82JON 01
661	14		ITNA	77NAD 02
665		11	AA	79HOE 02
668	25	11	ICPES	81MUN 01
670	50	35	ITNA	81GLA 03
672		11	AA	79HOE 02
674	97		ITNA	86KRA 01
675.8	18.9		CPAA	85CAN 01
684	9	6	FAA	84FUD 02
685	20	D	ICPES	80SCH 08
685	20		ICPES	80SCH 05
685	50	6	AF	83MCC 02
698			VOLT	81SZY 01
705	30		AA	83RAP 01
706	12		ITNA	79DAS 01
706	12		RTNA	80SLO 01
730	90		ITNA	79REN 03
831	10	6	EXRF	79MAT 01
1170			EXRF	81PAR 01

TABLE 1573-2: INDIVIDUAL DATA FOR NBS SRM 1573 (cont.)

Conc	Uncer	Com	Method	Reference
Fe(II) (ug/g)				
540			VOLT	81SZY 01
Fe(III) (ug/g)				
158			VOLT	81SZY 01
Ga (ng/g)				
69.3	67		NAA	76GUZ 01
83			FAA	85XIA 01
Gd (ng/g)				
74	15		RTNA	83TJI 01
76	5		RTNA	86TSU 01
H (%)				
5	0.1	35	TCGS	79GLA 04
5.1	0.2		CB	82GLA 02
5.14	0.07		CB	80SCH 02
Hf (ng/g)				
250	20		ITNA	86KRA 01
Hg (ng/g)				
90	8		ITNA	77NAD 02
91	11		CVAA	82GLA 02
128	118		NAA	76GUZ 01
Ho (ng/g)				
13	1		RTNA	86TSU 01
I (ng/g)				
280	30		IENA	82SAT 01
300	100		PAA	77WIL 01
390	120		RTNA	77STE 02
In (ng/g)				
0.96	0.08		RTNA	74RAV 01

Conc	Uncer	Com	Method	Reference
K (%)				
2.68	0.26	11	ICPES	81MUN 01
2.9			ICPES	84NAD 01
3	0.29		ICPES	79HER 01
3.8			OES	75JON 02
3.81			OES	75JON 10
3.85			OES	75JON 07
4.055		1	AA	78SZY 01
4.15	0.08		ITNA	79REN 03
4.17		1	AA	78SZY 01
4.18	0.4		ITNA	86KRA 01
4.25			OES	75JON 04
4.3	0.2	11	ICPES	82JON 01
4.33			OES	75JON 08
4.34	0.18		ICPES	85WHI 02
4.34	0.23	11	ICPES	81MUN 01
4.39	0.09		CPXRF	84BIS 01
4.4	0.1	11	ICPES	82JON 01
4.4	0.2	11	ICPES	82JON 01
4.4272	0.2816		NAA	76GUZ 01
4.47	0.15		ITNA	80SLO 01
4.47	0.24		ITNA	77NAD 02
4.49			ICPES	79COO 01
4.51			OES	75JON 09
4.58			OES	75JON 03
4.58	0.0046	11	AA	75ISA 01
4.6			OES	75JON 06
4.6	0.0083	11	AA	75ISA 01
4.6	0.2	11	ICPES	82JON 01
4.73	0.14	11	AA	84SUZ 03
4.74			OES	75JON 05
4.79	0.06	6	EXRF	79MAT 01
4.8			OES	75JON 11
4.81	0.09	11	AA	84SUZ 03
5.16	0.06	6	EXRF	79MAT 01
5.72			OES	75JON 01
9.24			EXRF	81PAR 01
La (ng/g)				
346	79		NAA	76GUZ 01
630	90		ITNA	86KRA 01
640	40		ITNA	77NAD 02
677	13		RTNA	86TSU 01
766	199		RTNA	83TJI 01
770	110		RTNA	80SLO 01
800	200		ITNA	79REN 03

TABLE 1573-2: INDIVIDUAL DATA FOR NBS SRM 1573 (cont.)

Conc	Uncer	Com	Method	Reference
Lu (ng/g)				
7	1		RTNA	83TJI 01
9	1		RTNA	86TSU 01
12	2		RTNA	80SLO 01
Mg (ug/g)				
5365			ICPES	81GOO 01
6000			OES	75JON 08
6000	600		ITNA	80SLO 01
6100	600		ICPES	79HER 01
6300			OES	75JON 09
6400	400		ICPES	85LYO 01
6500	300		ICPES	85WHI 02
6600			OES	75JON 07
6672	186	11	ICPES	81MUN 01
6700	3	11	AA	75ISA 01
6700	3	11	AA	75ISA 01
6700	200	11	ICPES	82JON 01
6784	206	11	ICPES	81MUN 01
6800			ICPES	84NAD 01
6800			OES	75JON 10
6800	90		ICPES	83SCH 03
6900			OES	75JON 04
6900	200	11	ICPES	82JON 01
6900	200	11	ICPES	82JON 01
7000			OES	75JON 03
7000	100	11	AA	84SUZ 03
7000	200	11	AA	84SUZ 03
7000	200	11	ICPES	82JON 01
7100			OES	75JON 02
7300	100		ITNA	77NAD 02
7400			OES	75JON 05
7400			OES	75JON 06
7400			OES	75JON 11
7800			OES	75JON 01
Mn (ug/g)				
138			OES	75JON 07
189			OES	75JON 10
189			OES	75JON 04
197			OES	75JON 09
198			OES	75JON 06
200			ITNA	79REN 03
200	9		CPXRF	84BIS 01
209.18	9.93		NAA	76GUZ 01
209.2	11.9		ITNA	77GUZ 01
210			OES	75JON 02
211.1	2.1		AA	77GUZ 01
215			OES	75JON 11

Conc	Uncer	Com	Method	Reference
Mn (ug/g) cont.				
215	27		FAA	84KUR 01
216	17	11	AA	75ISA 01
217		11	AA	79HOE 02
217	5	11	ICPES	82JON 01
217	16	11	ICPES	81MUN 01
218	13	11	AA	75ISA 01
219	7		ICPES	85WHI 02
221	5	11	ICPES	82JON 01
222	5	11	ICPES	82JON 01
223		11	AA	79HOE 02
223	7	6	EXRF	79MAT 01
224	2.6	11	AA	84SUZ 03
225.6	17		ICPES	85LYO 01
227			OES	75JON 05
227	7	6	AF	83MCC 02
230			OES	75JON 03
230	5	11	ICPES	82JON 01
230	9	6	AF	83MCC 02
231	3.6	11	AA	84SUZ 03
231	8	11	ICPES	81MUN 01
231	10		ITNA	80SLO 01
232			ICPES	84NAD 01
233	13		ICPES	83SCH 03
234	5		VV	80SCH 05
234	5	D	ICPES	80SCH 08
235	2		NM	84SUZ 01
235	4	6	FAA	84FUD 02
235	5		ICPES	79HER 01
236	5	6	FAA	84FUD 02
238	17		ITNA	77NAD 02
240	4		ICPES	83SCH 04
241			OES	75JON 08
241	12		AA	83RAP 01
251			OES	75JON 01
252			ICPES	81GOO 01
266			ITNA	82GLA 02
266	8	6	EXRF	79MAT 01
414			EXRF	81PAR 01
Mo (ug/g)				
0.4	0.2	11	ICPES	82JON 01
0.5	0.1	11	ICPES	82JON 01
0.5	0.1	11	ICPES	82JON 01
0.5	0.3	11	ICPES	82JON 01
0.62	0.04		ITNA	77NAD 02
0.65	0.1		RTNA	80SLO 01
2.8			OES	75JON 10
4.2			OES	75JON 11
4.5			OES	75JON 03
11.7			OES	75JON 01
14.6			OES	75JON 07
17.9			OES	75JON 02

TABLE 1573-2: INDIVIDUAL DATA FOR NBS SRM 1573 (cont.)

Conc	Uncer	Com	Method	Reference
N (%)				
4.9	0.2	35	TCGS	79GLA 04
4.94	0.11		CB	80SCH 02
4.95	0.08		CB	82GLA 02
Na (ug/g)				
326	18	11	ICPES	81MUN 01
332	4.9	11	AA	84SUZ 03
337	13	11	ICPES	81MUN 01
337	23	11	AA	84SUZ 03
350			OES	75JON 04
369	16		ICPES	85WHI 02
388			OES	75JON 02
459	46.1		NAA	76GUZ 01
475	25		ITNA	80SLO 01
488		1	AA	78SZY 01
500	200		ITNA	79REN 03
520			ICPES	81GOO 01
522	13		ITNA	77NAD 02
531			OES	75JON 08
568			ICPES	84NAD 01
602		1	AA	78SZY 01
610			OES	75JON 06
618	18		ITNA	86KRA 01
650			OES	75JON 03
800			OES	75JON 01
820			OES	75JON 09
950			OES	75JON 05
1090	70		ITNA	82SCH 05
1600			OES	75JON 11
Nd (ng/g)				
566	59		RTNA	86TSU 01
580	140		RTNA	83TJI 01
700	100		RTNA	80SLO 01
Ni (ug/g)				
<	1.5	11	ICPES	81MUN 01
0.3	0.2		RTNA	80SLO 01
1.1	0.08	11	ICPES	82JON 01
1.12	0.06	11	ICPES	82JON 01
1.12	0.08	11	ICPES	82JON 01
1.2	0.3		ITNA	77NAD 02
1.3	0.2	11	ICPES	82JON 01
1.5	0.8	11	ICPES	81MUN 01
1.7	0.4		ICPES	83SCH 03
5.9	0.6		ICPES	79HER 01

Conc	Uncer	Com	Method	Reference
P (ug/g)				
2400			OES	75JON 04
2700			ICPES	84NAD 01
2800			OES	75JON 10
3030			ICPES	81GOO 01
3100			OES	75JON 07
3200			OES	75JON 05
3200	200	6	FAA	81LAN 01
3263	130	11	ICPES	81MUN 01
3300			OES	75JON 09
3300			OES	75JON 08
3300			OES	75JON 11
3300			OES	75JON 06
3300	200	6	FAA	81LAN 01
3300	200		ICPES	85WHI 02
3318	106	11	ICPES	81MUN 01
3320	160		ICPES	81OWE 01
3400			OES	75JON 03
3400			FAA	79EDI 01
3400			ICPES	79EDI 01
3400	100	11	ICPES	82JON 01
3400	200		CPAA	83MAS 02
3420	89.5		NAA	76GUZ 01
3459	8		ICPES	84PRI 01
3500	100	11	ICPES	82JON 01
3500	100	11	ICPES	82JON 01
3500	100	11	ICPES	82JON 01
3500	200	6	FAA	81LAN 01
3700	100		ICPES	79HER 01
3800			OES	75JON 02
3900	200		ICPES	85LYO 01
5000			OES	75JON 01
Pb (ug/g)				
3.2		6	POL	72SIN 01
4			ASV	74COP 01
4.3	0.2	11	ICPES	82JON 01
4.5	0.1	6	POL	72SIN 01
4.9		11	FAA	80PRE 01
5.0	0.2	11	ICPES	82JON 01
5.2	0.8		AA	84KAN 01
5.4		6	FAA	81JAC 01
5.5		11	FAA	79HOE 02
5.5	0.4		FAA	80LEG 01
5.6		6	FAA	81JAC 01
5.6	0.2		ASV	82SAT 02
5.7		11	FAA	79HOE 02
5.8		6	FAA	81HIN 01
5.8		6	FAA	82KOI 01
5.8		6	FAA	81HIN 01

TABLE 1573-2: INDIVIDUAL DATA FOR NBS SRM 1573 (cont.)

Conc	Uncer	Com	Method	Reference
Pb (ug/g) cont.				
5.8		6	FAA	82KOI 01
5.8	0.8		HAA	82WEI 01
5.9		11	FAA	80PRE 01
5.9	0.5		XRF	85AVA 01
5.95	0.06		FAA	79DAB 02
6			FAA	82HOE 01
6		11	FAA	80PRE 01
6			ASV	82GAJ 01
6.0	0.5		FAA	84GLA 11
6.03	0.15		IDMS	83BRO 01
6.1			FAA	83HOE 01
6.1		11	FAA	79HOE 02
6.1	0.3		AA	80SCH 05
6.1	0.3	D	FAA	80SCH 08
6.2			FAA	80PRE 01
6.2	0.3		FAA	81KNA 01
6.23	0.97		CPAA	85CAN 01
6.3		11	FAA	80PRE 01
6.3	0.5		ICPES	83SCH 03
6.4	0.1		AA	83RAP 01
6.4	0.3		FAA	82ATS 02
6.55	0.22		ASV	80SZY 01
6.6			FAA	82PRE 01
7.1	0.9		FAA	82WEI 01
7.5		11	FAA	80PRE 01
7.6	3.1		FAA	85GAU 04
8.1	1.8	11	ICPES	81MUN 01
8.3	1.1		ICPES	79HER 01
9.1	2.9	11	ICPES	81MUN 01
15			EXRF	81PAR 01
Pd (ng/g)				
<	2		RTNA	85BEM 01
Pr (ng/g)				
184	11		RTNA	86TSU 01
190	40		RTNA	80SLO 01
Rb (ug/g)				
15.16	1.35		NAA	76GUZ 01
15.21	2.3		ITNA	79REN 03
16.4	0.5		ITNA	77GUZ 01
16.5	0.7		ITNA	77NAD 02
16.8	0.9		ITNA	86KRA 01
19.2	1.8		CPXRF	84BIS 01
22	3	35	ITNA	81GLA 03
40			EXRF	81PAR 01

Conc	Uncer	Com	Method	Reference
S (ug/g)				
5500	300		CB	84GLA 11
5848	58		ICPES	84PRI 01
5860	270		CB	86BOW 01
5960	150		WXRF	86BOW 01
6260		D	CB	85JAC 01
6260	100	6	CB	84JAC 01
6360	190		CB	86GAU 01
6550		D	CB	85JAC 01
6550	90	6	CB	84JAC 01
6900	300		ICPES	85WHI 02
Sb (ng/g)				
30	1		RTNA	79HOE 01
30	2		RTNA	80KOS 02
34			HAA	82KUE 03
40	2		ITNA	77NAD 02
46	20		ITNA	86KRA 01
120	30	7	RTNA	80GAL 02
120	50		ITNA	79REN 03
Sc (ng/g)				
138	7		ITNA	77GUZ 01
151	4		ITNA	84GLA 11
160	30		ITNA	79REN 03
164	16		ITNA	86GAU 01
170	3		ITNA	77NAD 02
175	1		ITNA	85GAU 04
175	4		ITNA	86KRA 01
208	89		NAA	76GUZ 01
220	30		RTNA	80SLO 01
Se (ng/g)				
49	5		ITNA	77NAD 02
50	20		RTNA	80KNA 01
57	3	11	GC	81UCH 02
61	2	11	GC	81UCH 02
84	15	9	ITNA	80WAN 01
Si (ug/g)				
3000			ICPES	84NAD 01
Sm (ng/g)				
81	3		RTNA	86TSU 01
86	27		RTNA	83TJI 01
110	15		RTNA	80SLO 01
200	90		ITNA	79REN 03

TABLE 1573-2: INDIVIDUAL DATA FOR NBS SRM 1573 (cont.)

Conc	Uncer	Com	Method	Reference
Sr (ug/g)				
35.6	1.4		IENA	85GAU 04
36	0.6		ICPES	79HER 01
38			OES	75JON 04
38			OES	75JON 03
42.2	0.8		AA	86GAU 01
42.9	0.5		CPAA	85CAN 01
43.7	0.2		AA	85GAU 04
44	2		CPXRF	84BIS 01
44.8	0.5		CPAA	85MAS 01
45	1		ITNA	77NAD 02
45.3	0.4		IDNAA	85YAG 01
54			OES	75JON 01
65.5	5.84		NAA	76GUZ 01
102			EXRF	81PAR 01
Ta (ng/g)				
430	300		ITNA	79REN 03
Tb (ng/g)				
4	1		RTNA	80SLO 01
12	2		RTNA	86TSU 01
12	4		RTNA	83TJI 01
Th (ng/g)				
190	20		ITNA	77NAD 02
220	30		RTNA	80SLO 01
Ti (ug/g)				
12.6	1		ICPES	83SCH 03
68	9		ITNA	77NAD 02
89	8		COLOR	84GLA 11
Tl (ng/g)				
20		11	ASV	84LIE 01
24		11	ASV	84LIE 01
U (ng/g)				
20	20		RTNA	80SLO 01
50.2	2.3		RTNA	78DER 01
54			DNA	84GLA 02
60	120	R*	DNA	81GLA 03
63	3	35	DNA	80GLA 04
63	4		DNA	86GAU 01
63	6		DNA	85GAU 04
V (ug/g)				
0.31	0.045	11	RTNA	82HEY 02
0.87	0.013	11	RTNA	82HEY 02
0.888	0.013	11	RTNA	82HEY 02
1.19	0.01	11	ICPES	82JON 01
1.27	0.035		RTNA	78BYR 01
1.297	0.112		ITNA	82HEY 02
1.3	0.2		ITNA	77NAD 02
1.42	0.08	11	ICPES	82JON 01
1.5	0.2		ICPES	83SCH 03
W (ng/g)				
<	40	L	RTNA	80SLO 01
Yb (ng/g)				
47	10		RTNA	83TJI 01
63	4		RTNA	86TSU 01
80	20		RTNA	80SLO 01
Zn (ug/g)				
26			OES	75JON 09
29			ASV	74COP 01
48			OES	75JON 10
50			OES	75JON 03
52	1	11	ICPES	82JON 01
53			FAA	83ATS 01
54	4		RTNA	80SLO 01
55	3		XRF	85AVA 01
56	2	11	ICPES	82JON 01
56.8	7.3		ICPES	85LYO 01
57	2	11	ICPES	82JON 01
58			OES	75JON 01
58			OES	75JON 06
58	1.5	11	AA	84SUZ 03
58	4	6	AF	83MCC 02
58.03	3.33		NAA	76GUZ 01
58.9		11	AA	79HOE 02
59			ICPES	81GOO 01
59			OES	75JON 11
59	2	11	ICPES	82JON 01
59	3	11	ICPES	82JON 01
59	3		AA	83RAP 01
59.5	2.2		ICPES	83SCH 03
60			OES	75JON 02
60	2	6	AF	83MCC 02
60	3	11	ICPES	82JON 01
61		6	AA	72SIN 01
61	3		ICPES	85WHI 02

TABLE 1573-2: INDIVIDUAL DATA FOR NBS SRM 1573 (cont.)

Conc	Uncer	Com	Method	Reference
Zn (ug/g) cont.				
62	3	11	ICPES	82JON 01
62	4		ITNA	77NAD 02
62	4.6		ITNA	79REN 03
62.5			AA	81ARA 01
62.5	1.2		CPAA	85CAN 01
62.9		6	POL	72SIN 01
62.9	1.7	6	POL	72SIN 01
63	2.5	11	AA	75ISA 01
63.5	1.5	11	ICPES	81MUN 01
64	3	11	ICPES	82JON 01
65			OES	75JON 07
65			OES	75JON 05
65	3.25	11	AA	75ISA 01
65	7		ICPES	80SCH 05
65	7	D	ICPES	80SCH 08
66	2.2	11	AA	84SUZ 03
66.4	8		CPXRF	84BIS 01
66.6	4.6	11	ICPES	81MUN 01
68		11	AA	79HOE 02
68			FAA	83ATS 01
68.5	1.7		ITNA	86KRA 01
71	2		ICPES	83SCH 04
72.8	2	6	EXRF	79MAT 01
73	3		ICPES	79HER 01
75			OES	75JON 08
78	2.1	6	EXRF	79MAT 01
86			OES	75JON 04
124			EXRF	81PAR 01

TABLE 1575-1: COMPILED DATA FOR NBS SRM 1575 PINE NEEDLES (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		OTHER METHODS					
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method	Mean ± SD	(n)	Method
Ag	ng/g	---	150	(1)	---	---	---		150	(1)	---		---			---		
Al	ug/g	545 ± 30	510 ± 60	(24)	521	399 - 620	558 ± 26	(3)	600 ± 80	(6)	500 ± 60	(7)	658	(2)	XRF	420 ± 100	(8)	OES
Al	ug/g	---	---		---	---	---		---		---		452.7	(2)	COLOR	---		
As	ng/g	210 ± 40	207 ± 18	(22)	200	180 - 240	205 ± 17	(11)	212 ± 20	(9)	193	(1)	---			210	(1)	COLOR
Au	ng/g	---	0.6	(2)	---	0.3 - 0.9	---		0.6	(2)	---		---			---		
B	ug/g	---	17 ± 2	(18)	17	13 - 20	---		16	(1)	16 ± 2	(4)	17 ± 3	(10)	OES	---		
B	ug/g	---	---		---	---	---		---		---		17.4 ± 1.5	(3)	TCGS	---		
Ba	ug/g	---	7.2 ± 0.8	(8)	7	6 - 8.4	---		7.25	(2)	7.45	(2)	7.0 ± 0.8	(4)	OES	---		
Br	ug/g	9	6.9 ± 0.9	(12)	6.8	5.4 - 8.6	---		7.0 ± 0.8	(10)	---		6.24	(2)	XRF	---		
C	%	---	50.49 ± 0.18	(3)	50.4	50.37 - 50.7	---		---		---		50.49 ± 0.18	(3)	CB	---		
Ca	ug/g	4100 ± 200	4200 ± 360	(28)	4182	3600 - 5000	4660	(1)	4290 ± 180	(4)	4130 ± 230	(11)	3765	(2)	XRF	4300 ± 600	(9)	OES
Ca	ug/g	---	---		---	---	---		---		---		---			4290	(1)	NM
Cd	ng/g	< 500	220 ± 60	(20)	200	140 - 340	240 ± 60	(9)	193 ± 13	(3)	210 ± 70	(8)	---			---		
Ce	ng/g	400	210 ± 50	(3)	200	150 - 258	---		210 ± 50	(3)	---		---			---		
Cl	ug/g	---	280 ± 30	(5)	280	243 - 305	---		270 ± 25	(4)	---		305	(1)	XRF	---		
Co	ng/g	100	122 ± 14	(6)	110	110 - 140	110	(1)	128 ± 13	(4)	110	(1)	---			---		
Cr	ug/g	2.6 ± 0.2	2.6 ± 0.2	(16)	2.58	2.2 - 3.1	2.5 ± 0.2	(6)	2.57 ± 0.15	(3)	2.5 ± 0.4	(7)	2.58	(1)	XRF	---		
Cs	ng/g	---	110 ± 10	(6)	104	101 - 126	---		110 ± 10	(6)	---		---			---		
Cu	ug/g	3.0 ± 0.3	3.0 ± 0.4	(34)	3	2 - 4.5	3.3 ± 0.3	(9)	2.9 ± 0.4	(4)	2.7 ± 0.3	(11)	3.06 ± 0.10	(3)	XRF	2.8	(1)	FAE
Cu	ug/g	---	---		---	---	---		---		---		2.91 ± 0.02	(3)	COLOR	3.2	(1)	DCPES
Cu	ug/g	---	---		---	---	---		---		---		5.9 ± 2.2	(9)	OES	---		
Eu	ng/g	6	5.5 ± 1.3	(3)	6	4 - 6.5	---		5.5 ± 1.3	(3)	---		---			---		
F	ug/g	---	2.8 ± 0.7	(4)	2.5	2 - 3.7	---		---		---		---			2	(1)	COLOR
F	ug/g	---	---		---	---	---		---		---		3.7	(1)	MS	2.7	(2)	ISE
Fe	ug/g	200 ± 10	185 ± 26	(36)	188	118 - 254	196 ± 13	(4)	203 ± 40	(6)	189 ± 22	(12)	192 ± 4	(4)	XRF	170 ± 60	(9)	OES
Fe	ug/g	---	---		---	---	---		---		---		181 ± 12	(3)	COLOR	198	(1)	AF
Gd	ng/g	---	28	(1)	---	---	---		28	(1)	---		---			---		
H	%	---	6.48 ± 0.08	(3)	6.5	6.39 - 6.54	---		---		---		6.5	(1)	TCGS	6.46	(2)	CB
H2O-	%	---	4.4	(1)	---	---	---		---		---		---			4.4	(1)	GRAV
Hf	ng/g	---	23	(2)	---	10 - 36	---		23	(2)	---		---			---		
Hg	ng/g	150 ± 50	144 ± 16	(5)	147	121 - 160	146 ± 12	(3)	140	(2)	---		---			---		
I	ng/g	---	145	(2)	---	140 - 150	---		145	(2)	---		---			---		
K	ug/g	3700 ± 200	3670 ± 310	(20)	3700	2700 - 5100	---		4100 ± 700	(4)	3630 ± 200	(9)	3700	(2)	XRF	3800 ± 800	(7)	OES
La	ng/g	200	160 ± 40	(5)	141	130 - 210	---		160 ± 40	(5)	---		---			---		
Li	ng/g	---	340	(1)	---	---	340	(1)	---		---		---			---		
Lu	ng/g	---	1.6 ± 0.6	(3)	1.3	1.2 - 2.2	---		1.6 ± 0.6	(3)	---		---			---		

TABLE 1575-1: COMPILED DATA FOR NBS SRM 1575 PINE NEEDLES (cont.)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		OTHER METHODS				
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method	Mean ± SD	(n) Method
Mg	ug/g	---	1220 ± 160	(24)	1200	900 - 1600	---		1340 ± 150	(3)	1150 ± 70	(11)	1320 ± 230	(10)	OES	1070	(1) XRF
Mn	ug/g	675 ± 15	650 ± 70	(34)	670	430 - 738	677 ± 20	(4)	684 ± 17	(4)	663 ± 32	(13)	1070 ± 750	(4)	XRF	570 ± 100	(8) OES
Mn	ug/g	---	---		---	---	---		---		---		---			673	(1) DCPES
Mo	ug/g	---	0.15 ± 0.05	(5)	0.13	0.1 - 0.2	---		0.1	(1)	0.16 ± 0.05	(4)	2.3 ± 1.0	(4)	OES	---	
N	%	1.2	1.20 ± 0.10	(3)	1.2	1.11 - 1.3	---		---		---		1.16	(2)	CB	1.3	(1) TCGS
Na	ug/g	---	50 ± 30	(17)	37	18 - 105	---		46 ± 18	(5)	40 ± 37	(5)	59 ± 36	(7)	OES	---	
Nd	ng/g	---	164	(2)	---	128 - 200	---		164	(2)	---		---			---	
Ni	ug/g	3.5	2.5 ± 0.3	(13)	2.31	2.2 - 3.3	3.3	(1)	2.25	(2)	2.30 ± 0.08	(6)	2.50	(2)	XRF	2.63	(1) VOLT
Ni	ug/g	---	---		---	---	---		---		---		---			2.9	(1) DCPES
P	ug/g	1200 ± 200	1190 ± 110	(25)	1170	1000 - 1410	1255	(2)	---		1170 ± 60	(13)	1145	(2)	XRF	1240 ± 150	(7) OES
P	ug/g	---	---		---	---	---		---		---		---			1100	(1) CPAA
Pb	ug/g	10.8 ± 0.5	10.7 ± 0.5	(29)	10.8	9.6 - 11.9	10.8 ± 0.4	(20)	---		11.3 ± 1.8	(6)	8.6 ± 1.5	(3)	XRF	10.6	(1) IDMS
Pb	ug/g	---	---		---	---	---		---		---		---			10.7	(2) ASV
Pd	ng/g	---	< 2		---	---	---		< 2		---		---			---	
Pr	ng/g	---	< 70		---	---	---		< 70		---		---			---	
Rb	ug/g	11.7 ± 0.1	11.7 ± 1.0	(6)	11	10.8 - 13.1	---		11.6 ± 0.8	(4)	---		12.0	(2)	XRF	---	
S	ug/g	---	1320 ± 110	(9)	1250	1200 - 1500	---		---		1400	(1)	1220 ± 430	(4)	XRF	1240 ± 30	(5) CB
Sb	ng/g	200	198 ± 17	(12)	189	180 - 220	184 ± 4	(3)	202 ± 17	(9)	---		---			---	
Sc	ng/g	30	41 ± 8	(6)	39	27 - 53	---		41 ± 8	(6)	---		---			---	
Se	ng/g	---	47 ± 5	(5)	44	43 - 53	---		49 ± 4	(3)	---		---			43	(2) GC
Si	ug/g	---	814	(2)	---	248 - 1380	---		---		---		814	(2)	XRF	---	
Sm	ng/g	---	20 ± 2	(3)	20	18 - 21	---		20 ± 2	(3)	---		---			---	
Sr	ug/g	4.8 ± 0.2	5.0 ± 0.4	(7)	4.9	4.45 - 5.5	---		5.4	(1)	4.82	(2)	4.98	(2)	XRF	5	(1) OES
Sr	ug/g	---	---		---	---	---		---		---		---			4.7	(1) AF
Ta	ng/g	---	13	(1)	---	---	---		13	(1)	---		---			---	
Tb	ng/g	---	31	(2)	---	2 - 60	---		31	(2)	---		---			---	
Th	ng/g	37 ± 3	40 ± 9	(3)	35	34 - 50	---		40 ± 10	(3)	---		---			---	
Ti	ug/g	---	13.7	(1)	---	---	---		---		---		13.7	(1)	XRF	---	
Tl	ng/g	50	29 ± 2	(5)	29	27 - 31	29	(1)	---		---		29.0 ± 1.8	(4)	ASV	---	
U	ng/g	20 ± 4	16 ± 3	(6)	15	13 - 20	---		16 ± 2	(6)	---		---			---	
V	ng/g	---	390 ± 70	(8)	370	248 - 470	---		380 ± 90	(6)	390	(2)	---			---	
W	ng/g	---	50	(1)	---	---	---		50	(1)	---		---			---	
Yb	ng/g	---	17.5	(2)	---	9 - 26	---		17.5	(2)	---		---			---	
Zn	ug/g	---	67 ± 9	(33)	66	51 - 87	65	(1)	58 ± 6	(4)	68 ± 8	(15)	60 ± 7	(4)	XRF	74 ± 10	(8) OES
Zn	ug/g	---	---		---	---	---		---		---		---			71	(1) DCPES

TABLE 1575-2: INDIVIDUAL DATA FOR NBS SRM 1575 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ag (ng/g)				
150	50		RTNA	80SLO 01
Al (ug/g)				
255			OES	75JON 11
287			OES	75JON 02
399			ICPES	81GOO 01
405			OES	75JON 06
439	18	11	ICPES	81MUN 01
443.9	20.4	6	COLOR	85BAR 01
449			OES	75JON 07
461.5	16.6	6	COLOR	85BAR 01
465			OES	75JON 05
473			OES	75JON 08
483			OES	75JON 04
495			ICPES	84NAD 01
498	15	11	ICPES	81MUN 01
521			OES	75JON 03
526	17	11	ICPES	82JON 01
529	6		ITNA	84GLA 11
532	20		AA	83RAP 01
553	12		ITNA	86KRA 02
558			FAA	86KRA 02
560	10		ICPES	83SCH 04
565	44		ITNA	77NAD 02
575.1	1		ICPES	84FOG 01
582	47		CPXRF	80KIR 01
585			AA	81ARA 01
590	50		ITNA	85GAU 04
620		35	ITNA	81GLA 03
734			CPXRF	84KAU 01
750	200		ITNA	80SLO 01
1243			OES	75JON 01
As (ng/g)				
150	50		RTNA	80SLO 01
154	5	7	FAA	82HOE 02
180	15	7	FAA	82HOE 02
181	3		RTNA	79HOE 01
187	6	7	FAA	82HOE 02
190	10	11	HAA	82JON 01
190	30	11	HAA	82JON 01
193			ICPES	84MIA 01
200			FAA	84XIA 01
200	20	7	RTNA	80GAL 02
200	20	7	RTNA	77GIL 03
200	30		ITNA	77NAD 02
200	50		AA	83RAP 01
205	22		ITNA	85GAU 04
210	10		COLOR	77BUR 01
210	20		HAA	84NAR 01
215	6		HAA	81UTH 01
220	20	7	RTNA	80GAL 02
220	40		IENA	82GLA 02
220	60		HAA	85NAR 03
230			HAA	81ARA 01
230	20		FAA	80DUP 01
240	20	7	RTNA	77GIL 03
240	20	7	RTNA	80GAL 02
Au (ng/g)				
0.3	0.08		ITNA	79REN 03
0.9	0.1		RTNA	80SLO 01
B (ug/g)				
13			OES	75JON 08
13			OES	75JON 09
13.3	0.7		ICPES	79HER 01
15			OES	75JON 02
15			OES	75JON 05
16	4		ITNA	82SCH 05
16.1	0.1		TCGS	82GLA 02
17			OES	75JON 01
17	1	35	TCGS	81GLA 04
17.2	1.4	11	ICPES	81MUN 01
17.6	0.7	11	ICPES	81MUN 01
18			ICPES	81GOO 01
18			OES	75JON 07
19			OES	75JON 06
19	1		TCGS	84GLA 11
20			OES	75JON 04
20			OES	75JON 03
20			OES	75JON 11
Ba (ug/g)				
3			OES	75JON 03
6			OES	75JON 05
6.1	0.4		ITNA	77NAD 02
7			OES	75JON 11
7			OES	75JON 04
7.1			ICPES	84NAD 01
7.8	4		ICPES	85WHI 02
8			OES	75JON 01
8.4	2.5		ITNA	85GAU 04

TABLE 1575-2: INDIVIDUAL DATA FOR NBS SRM 1575 (cont.)

Conc	Uncer	Com	Method	Reference
Br (ug/g)				
5.4	1.2		CPXRF	80KIR 01
6.1	0.09		ITNA	79REN 03
6.25	0.2		ITNA	80HOE 01
6.4	0.8	5	IENA	79GLA 02
6.43	0.08		ITNA	77NAD 02
6.8	0.5	5	IENA	79GLA 02
6.9	0.2		ITNA	85GAU 04
7.08			CPXRF	84KAU 01
7.4	0.3		ITNA	77STE 02
7.6			ITNA	86GAU 01
8			ITNA	84GLA 02
8.6			ITNA	84GLA 11
30			EXRF	81PAR 01
C (%)				
50.37	0.16		CB	80SCH 02
50.4	1.5	35	CB	79GLA 04
50.7	0.9		CB	82GLA 02
54	2	35	TCGS	79GLA 04
Ca (ug/g)				
3100	200		ITNA	80SLO 01
3300			OES	75JON 07
3600			ICPES	84NAD 01
3700	500		CPXRF	80KIR 01
3800			OES	75JON 02
3800			OES	75JON 11
3800			OES	75JON 05
3830			CPXRF	84KAU 01
3900			OES	75JON 09
4000			OES	75JON 06
4000	30		ICPES	84FOG 01
4000	100	11	ICPES	82JON 01
4070	120		ITNA	85GAU 04
4090	20	11	ICPES	82JON 01
4100	30	11	ICPES	82JON 01
4110	30	11	ICPES	82JON 01
4182	67	11	ICPES	81MUN 01
4200	100		ICPES	85WHI 02
4290	40		NM	81YUZ 01
4290	60		ICPES	79HER 01
4300			ITNA	84GLA 11
4300	600		ITNA	79REN 03
4316	157	11	ICPES	81MUN 01
4500	400		ICPES	85LYO 01
4500	400		ITNA	77NAD 02
4600			OES	75JON 03
4660			AA	84GLA 02
Ca (ug/g) cont.				
4800			OES	75JON 04
4900			OES	75JON 01
5000			ICPES	81GOO 01
5300			OES	75JON 08
13100			EXRF	81PAR 01
Cd (ng/g)				
140	70	11	ICPES	82JON 01
150	20		ICPES	84FOG 01
160	90	11	ICPES	82JON 01
180	30		RTNA	80SLO 01
180	90	11	ICPES	82JON 01
185	17		FAA	84GLA 11
193	10	7	RTNA	80GAL 02
193	30		AA	86GAU 01
200			FAA	80PRE 01
200	20		ICPES	83SCH 04
206	10		RTNA	77DER 01
210			FAA	82PRE 01
220	30		FAA	84GLA 02
250	10		FAA	80LEG 01
260	10		ICPES	79HER 01
300	40	D	FAA	80SCH 08
300	40		AA	80SCH 05
300	100	11	ICPES	82JON 01
300	200	11	ICPES	81MUN 01
310	30		FAA	81KNA 01
340	30		AA	83RAP 01
Ce (ng/g)				
150	30		RTNA	80SLO 01
220	50		ITNA	85GAU 04
258	27		RTNA	83TJI 01
Cl (ug/g)				
243	20		ITNA	77NAD 02
260			ITNA	84GLA 11
280	30		ITNA	80SLO 01
300	20		ITNA	85GAU 04
305			CPXRF	84KAU 01
510	120		CPXRF	79REN 02
551	37		ITNA	77STE 02

TABLE 1575-2: INDIVIDUAL DATA FOR NBS SRM 1575 (cont.)

Conc	Uncer	Com	Method	Reference
Co (ng/g)				
110			FAA	82HOE 01
110			RTNA	80SLO 01
110	20		ICPES	84FOG 01
130	20		ITNA	77NAD 02
134	6		ITNA	77GUZ 01
140	20		ITNA	85GAU 04
340	180		ITNA	79REN 03
Cr (ug/g)				
1.3	0.2	11	ICPES	82JON 01
1.5	0.3	11	ICPES	81MUN 01
1.8			ICPES	84NAD 01
2.2	0.5	11	ICPES	81MUN 01
2.25		11	AA	79HOE 02
2.25		11	AA	79HOE 02
2.39		11	AA	79HOE 02
2.41	0.11		ITNA	77NAD 02
2.5			ICPES	81GOO 01
2.5	0.1		AA	83RAP 01
2.58			CPXRF	84KAU 01
2.6			AA	82WIL 04
2.6	0.1		ITNA	82GLA 02
2.6	0.2		ICPES	81KNA 01
2.62	0.2		ICPES	84FOG 01
2.7	0.2		ITNA	85GAU 04
2.8			FAA	82HOE 01
2.9	0.2	11	ICPES	82JON 01
3.1	0.6		ICPES	79HER 01
3.93	0.05		ITNA	79REN 03
4.48	0.19		FAA	83CAR 02
Cs (ng/g)				
101	3		ITNA	77NAD 02
102	7		ITNA	84GLA 11
104	4		ITNA	84GLA 02
109	3		ITNA	86GAU 01
115	7		ITNA	77GUZ 01
126	18		ITNA	85GAU 04
160	60		ITNA	79REN 03

Conc	Uncer	Com	Method	Reference
Cu (ug/g)				
0.7			OES	75JON 09
2			ICPES	81GOO 01
2			OES	75JON 02
2.3			FAA	83ATS 01
2.3	0.7	11	ICPES	81MUN 01
2.41	0.09		RTNA	77DER 01
2.5	0.3	11	ICPES	82JON 01
2.7	0.2	11	ICPES	82JON 01
2.8	0.1		AA	83RAP 01
2.8	0.3		FAE	76EPS 01
2.8	0.5	11	ICPES	81MUN 01
2.9	0.1		COLOR	76ZAN 02
2.9	0.1		COLOR	76EPS 01
2.9	0.2		ICPES	83SCH 04
2.9	0.2	11	ICPES	82JON 01
2.94	0.01		COLOR	77BUR 01
2.98	0.16	7	RTNA	80GAL 02
3	0.1		ICPES	80SCH 08
3	0.15		ICPES	81KNA 01
3	0.3		AA	76ZAN 01
3	0.3	D	AA	76ZAN 02
3	0.3		VV	80SCH 05
3	0.3		XRF	83PEL 01
3	0.5	11	ICPES	82JON 01
3	0.52		CPXRF	80KIR 01
3.01	0.5		ICPES	84FOG 01
3.04	0.16	7	RTNA	80GAL 02
3.17			CPXRF	84KAU 01
3.2	0.2		DCPES	79REE 01
3.2	0.2	D	DCPES	81REE 01
3.2	0.4		AA	76EPS 02
3.2	0.4		AA	84KAN 01
3.2	0.4		AA	76EPS 01
3.27	0.05		RTNA	80SLO 01
3.45		11	AA	79HOE 02
3.55		11	AA	79HOE 02
3.6	0.3		FAA	82KRI 01
3.7			AA	85KOJ 01
4			OES	75JON 04
4.1	0.8		ICPES	79HER 01
4.5			OES	75JON 07
5			OES	75JON 06
6			OES	75JON 08
8			OES	75JON 11
8			OES	75JON 01
8			OES	75JON 05
8			OES	75JON 03
11			AA	81ARA 01
53			XRF	80SUZ 02

TABLE 1575-2: INDIVIDUAL DATA FOR NBS SRM 1575 (cont.)

Conc	Uncer	Com	Method	Reference
Eu (ng/g)				
4	1		RTNA	83TJI 01
6	2.6		ITNA	77GUZ 01
6.5	0.8		ITNA	77NAD 02
11.3	1.6		ITNA	85GAU 04
F (ug/g)				
2			COLOR	83JAC 01
2.5	0.3		ISE	83KNA 01
2.9	0.8		ISE	84GLA 02
3.7	0.8		MS	77STE 02
Fe (ug/g)				
47			OES	75JON 09
100	10	11	ICPES	81MUN 01
106			OES	75JON 06
118			OES	75JON 02
120			OES	75JON 03
142			OES	75JON 11
152			ICPES	84NAD 01
152			ICPES	81GOO 01
156			OES	75JON 01
170	10		ITNA	79DAS 01
170	10		RTNA	80SLO 01
174	0.9	11	COLOR	82SCH 03
174	6	11	COLOR	82SCH 03
175	7	11	ICPES	82JON 01
177	4	11	ICPES	82JON 01
182			OES	75JON 08
183	3		ICPES	79HER 01
185		11	AA	79HOE 02
185		11	AA	79HOE 02
188	9		XRF	85AVA 01
188	17		CPXRF	80KIR 01
193			OES	75JON 07
194	4	11	ICPES	82JON 01
194	6	11	COLOR	82SCH 03
194	10		ICPES	80SCH 05
195			CPXRF	84KAU 01
195	10	11	ICPES	82JON 01
195	10	D	ICPES	80SCH 08
195.7	5.4		ITNA	77GUZ 01
196	7		ITNA	77NAD 02
196	13		XRF	83PEL 01
198	8		AF	81HOR 01
204	10		ITNA	85GAU 04
204	12		ICPES	81KNA 01
207	0.8		ICPES	84FOG 01
207	12		AA	83RAP 01
Fe (ug/g) cont.				
209			AA	82WIL 04
214.5	21.9		ICPES	85LYO 01
217	8	11	ICPES	81MUN 01
254			OES	75JON 05
260			OES	75JON 04
280	50		ITNA	79REN 03
595			AA	81ARA 01
790			EXRF	81PAR 01
Gd (ng/g)				
28	7		RTNA	83TJI 01
H (%)				
6.39	0.07		CB	80SCH 02
6.5	0.1	35	TCGS	79GLA 04
6.54	0.08		CB	82GLA 02
H2O- (%)				
4.4		D	GRAV	85NAR 03
4.4			GRAV	84NAR 01
Hf (ng/g)				
10			RTNA	80SLO 01
36	17		ITNA	85GAU 04
Hg (ng/g)				
121	6		ITNA	77NAD 02
133		11	CVAA	79HOE 02
147	8		CVAA	82GLA 02
157	18		CVAA	80DUM 01
160	20		RTNA	80SLO 01
I (ng/g)				
< 200		L	PAA	77WIL 01
140	20		IENA	82SAT 01
150	50		RTNA	77STE 02

TABLE 1575-2: INDIVIDUAL DATA FOR NBS SRM 1575 (cont.)

Conc	Uncer	Com	Method	Reference
K (ug/g)				
2700			OES	75JON 05
3000			ICPES	84NAD 01
3200			OES	75JON 09
3300	100		ICPES	79HER 01
3400	200	11	ICPES	82JON 01
3500	500		CPXRF	80KIR 01
3530	80	11	ICPES	82JON 01
3600			ICPES	79COO 01
3600	100		ITNA	77NAD 02
3620	40	11	ICPES	82JON 01
3665	82	11	ICPES	81MUN 01
3700			OES	75JON 03
3700	200		ITNA	79REN 03
3794	143	11	ICPES	81MUN 01
3800			OES	75JON 04
3850	80	11	ICPES	82JON 01
3900	200		ICPES	85WHI 02
3910			CPXRF	84KAU 01
4000			OES	75JON 01
4000	100		ITNA	80SLO 01
4400			OES	75JON 02
5100			OES	75JON 06
5100			ITNA	84GLA 11
5800			OES	75JON 11
6500			OES	75JON 07
9100			EXRF	81PAP 01
La (ng/g)				
130	20		RTNA	80SLO 01
140	10		ITNA	77NAD 02
141	22		RTNA	83TJI 01
190	13		ITNA	85GAU 04
210	30		ITNA	79REN 03
Li (ng/g)				
340	40		AA	85GAU 04
Lu (ng/g)				
1.2	0.2		RTNA	83TJI 01
1.3	0.3		RTNA	80SLO 01
2.2	0.5		ITNA	85GAU 04

Conc	Uncer	Com	Method	Reference
Mg (ug/g)				
900			OES	75JON 09
1000			ICPES	84NAD 01
1025			ICPES	81GOO 01
1070			CPXRF	84KAU 01
1100	100		ICPES	79HER 01
1140	19	11	ICPES	81MUN 01
1180	30	11	ICPES	82JON 01
1190	20	11	ICPES	82JON 01
1191	38	11	ICPES	81MUN 01
1200			OES	75JON 06
1200			OES	75JON 01
1200			OES	75JON 07
1200			OES	75JON 02
1200	20	11	ICPES	82JON 01
1200	30	11	ICPES	82JON 01
1200	70		ICPES	85LYO 01
1200	100		ICPES	85WHI 02
1200	200		ITNA	80SLO 01
1300			OES	75JON 03
1330			ITNA	84GLA 11
1400			OES	75JON 08
1500			OES	75JON 11
1500	200		ITNA	77NAD 02
1600			OES	75JON 05
1700			OES	75JON 04
2200	600		CPXRF	80KIR 01
Mn (ug/g)				
174			ICPES	81GOO 01
430			OES	75JON 09
448			OES	75JON 01
567			OES	75JON 06
570			OES	75JON 02
580			OES	75JON 04
588			OES	75JON 03
602	59	11	ICPES	81MUN 01
610			ICPES	84NAD 01
652	14	11	ICPES	82JON 01
652	15	11	ICPES	82JON 01
654	20		AA	77GUZ 01
655	13	11	ICPES	82JON 01
657	7	11	ICPES	82JON 01
660	28		ITNA	77NAD 02
668			OES	75JON 05
668	20		AA	83RAP 01
669	48		XRF	83PEL 01
670	6		ICPES	79HER 01
671	2		ICPES	83SCH 04
673	10		DCPES	79REE 01

TABLE 1575-2: INDIVIDUAL DATA FOR NBS SRM 1575 (cont.)

Conc	Uncer	Com	Method	Reference
Mn (ug/g) cont.				
673	10	D	DCPES	81REE 01
676	0.7		ICPES	84FOG 01
677	12		VV	80SCH 05
677	12	D	ICPES	80SCH 08
678	7		ICPES	81KNA 01
685	15		ITNA	80SLO 01
686			CPXRF	84KAU 01
686	53		ICPES	85LYO 01
688		11	AA	79HOE 02
690	20		ITNA	85GAU 04
693	6		ICPES	85WHI 02
698		11	AA	79HOE 02
700	100		ITNA	79REN 03
719	13	11	ICPES	81MUN 01
727			XRF	80SUZ 02
738			OES	75JON 08
885			OES	75JON 07
2200			EXRF	81PAR 01
Mo (ug/g)				
0.1			RTNA	80SLO 01
0.1	0.1	11	ICPES	82JON 01
0.13	0.06	11	ICPES	82JON 01
0.2	0.1	11	ICPES	82JON 01
0.2	0.1	11	ICPES	82JON 01
1.5			OES	75JON 11
1.7			OES	75JON 01
2.5			OES	75JON 07
3.6			OES	75JON 03
18.5			OES	75JON 02
N (%)				
1.11	0.01		CB	80SCH 02
1.2	0.14		CB	82GLA 02
1.3	0.2	35	TCGS	79GLA 04
Na (ug/g)				
18			OES	75JON 06
18	4	11	ICPES	81MUN 01
20			OES	75JON 03
23			ICPES	84NAD 01
26			ICPES	81GOO 01
26	4		ITNA	77NAD 02
26	9		ICPES	85WHI 02
30			OES	75JON 09
37	4		ITNA	85GAU 04
40			ITNA	79REN 03

Conc	Uncer	Com	Method	Reference
Na (ug/g) cont.				
56			ITNA	84GLA 11
70			OES	75JON 11
71			ITNA	84GLA 02
78			OES	75JON 08
100			OES	75JON 01
100			OES	75JON 05
105	16	11	ICPES	81MUN 01
190			OES	75JON 04
Nd (ng/g)				
128	53		RTNA	83TJI 01
200	100		RTNA	80SLO 01
Ni (ug/g)				
2.07	0.07	11	ICPES	82JON 01
2.2	0.1	11	ICPES	82JON 01
2.2	0.2		ITNA	77NAD 02
2.24	0.06	11	ICPES	82JON 01
2.3			ICPES	85JON 01
2.3	0.2		ICPES	79HER 01
2.3	0.2		RTNA	80SLO 01
2.31			CPXRF	84KAU 01
2.39	0.09	11	ICPES	82JON 01
2.4	0.5	11	ICPES	81MUN 01
2.63			VOLT	81PIH 01
2.7	1.1		CPXRF	80KIR 01
2.9	0.1		DCPES	79REE 01
2.9	0.1	D	DCPES	81REE 01
3.3	0.07		AA	83RAP 01
3.7	0.2		ICPES	84FOG 01
4			FAA	82HOE 01
P (ug/g)				
900			ICPES	84NAD 01
1000			OES	75JON 04
1000	300		CPXRF	80KIR 01
1100			ICPES	79EDI 01
1100			OES	75JON 09
1100			ICPES	81GOO 01
1100			FAA	79EDI 01
1100	50		ICPES	84FOG 01
1100	100		CPAA	83MAS 02
1146	120	11	ICPES	81MUN 01
1155	41	11	ICPES	81MUN 01
1170	40	11	ICPES	82JON 01
1170	50		ICPES	81OWE 01
1180	10		ICPES	79HER 01

TABLE 1575-2: INDIVIDUAL DATA FOR NBS SRM 1575 (cont.)

Conc	Uncer	Com	Method	Reference
P (ug/g) cont.				
1190	20	11	ICPES	82JON 01
1190	50	11	ICPES	82JON 01
1200			OES	75JON 05
1200	100		ICPES	85WHI 02
1260	20	11	ICPES	82JON 01
1290			CPXRF	84KAU 01
1300			OES	75JON 06
1300			OES	75JON 08
1300	100		ICPES	85LYO 01
1400			OES	75JON 07
1400			OES	75JON 11
1410	80		FAA	84KUB 01
1600			OES	75JON 02
1800			OES	75JON 03
2100			OES	75JON 01
Pb (ug/g)				
7.4	1.3		CPXRF	80KIR 01
8	1		XRF	85AVA 01
9.6	0.4	11	ICPES	82JON 01
9.8			FAA	80PRE 01
9.8	0.3	11	ICPES	82JON 01
10.2		6	FAA	84FUD 01
10.3			CPXRF	84KAU 01
10.4			ASV	82GAJ 01
10.4			FAA	82PRE 01
10.5		6	FAA	82KOI 01
10.5		6	FAA	81HIN 01
10.6		6	FAA	84FUD 01
10.6	0.3		AA	83RAP 01
10.6	0.3		IDMS	83BRO 01
10.7	2		AA	84KAN 01
10.8			FAA	83HOE 01
10.8			AA	82WIL 04
10.8	0.6		ICPES	84FOG 01
10.8	0.6		FAA	80LEG 01
10.9	0.3		FAA	81KNA 01
10.93	0.91		ASV	80SZY 01
11		6	FAA	82KOI 01
11		6	FAA	81HIN 01
11		11	FAA	79HOE 02
11	0.6		FAA	79DAB 02
11	1		ICPES	79HER 01
11.1	0.3		AA	80SCH 05
11.1	0.3	D	FAA	80SCH 08
11.2		11	FAA	79HOE 02
11.2			FAA	82HOE 01
11.2	1.1		HAA	82WEI 01
11.9	1.1	11	ICPES	81MUN 01
13.9	1.2		FAA	82WEI 01
14.6	3.4	11	ICPES	81MUN 01
33			EXRF	81PAR 01

Conc	Uncer	Com	Method	Reference
Pd (ng/g)				
<	2	L	RTNA	81BYR 01
<	2		RTNA	85BEM 01
Pr (ng/g)				
<	70	L	RTNA	80SLO 01
Rb (ug/g)				
10.8			CPXRF	84KAU 01
10.8	0.5		ITNA	85GAU 04
11	0.2		ITNA	77NAD 02
12.22	0.85		ITNA	77GUZ 01
12.5	3.9		ITNA	79REN 03
13.1	2.6		CPXRF	80KIR 01
35			EXRF	81PAR 01
S (ug/g)				
580	140		CPXRF	79REN 02
1200	250		CB	84GLA 11
1220	70		CB	86GAU 01
1240		D	CB	85JAC 01
1240	30	6	CB	84JAC 01
1250	40		CB	86BOW 01
1290			CPXRF	84KAU 01
1290		D	CB	85JAC 01
1290	50	6	CB	84JAC 01
1400	100		ICPES	85WHI 02
1490	40		WXRF	86BOW 01
1500	300		CPXRF	80KIR 01
Sb (ng/g)				
180	10		ITNA	77NAD 02
180	14		HAA	79VIJ 01
185	2		RTNA	79HOE 01
185	60		AA	83RAP 01
187	7		HAA	78KUB 02
189	17		ITNA	85GAU 04
190	10		RTNA	80SLO 01
198	3		RTNA	80KOS 02
220	10	7	RTNA	77GIL 03
220	10	7	RTNA	80GAL 02
220	20	7	RTNA	77GIL 03
220	20	7	RTNA	80GAL 02
1140	440		ITNA	79REN 03

TABLE 1575-2: INDIVIDUAL DATA FOR NBS SRM 1575 (cont.)

Conc	Uncer	Com	Method	Reference
Sc (ng/g)				
27	4		ITNA	77GUZ 01
38.7	0.6		ITNA	86GAU 01
39	2		ITNA	84GLA 11
42	2		ITNA	77NAD 02
45	6		ITNA	85GAU 04
53	8		ITNA	79REN 03
130			RTNA	80SLO 01
Se (ng/g)				
43	1	11	GC	81UCH 02
43	1	11	GC	81UCH 02
44	8		ITNA	77NAD 02
50	10		RTNA	80KNA 01
53	10	9	ITNA	80WAN 01
96	16		RTNA	82POL 01
Si (ug/g)				
248	36		CPXRF	80KIR 01
1380			CPXRF	84KAU 01
Sm (ng/g)				
18	1		RTNA	83TJI 01
20	2		RTNA	80SLO 01
21	2		ITNA	85GAU 04
130	120		ITNA	79REN 03
Sr (ug/g)				
4.45			CPXRF	84KAU 01
4.7	0.2		AF	81HOR 01
4.75	0.1		ICPES	84FOG 01
4.9	0.1		ICPES	79HER 01
5			OES	75JON 03
5.4			IENA	85GAU 04
5.5	0.57		CPXRF	80KIR 01
10			OES	75JON 04
20			OES	75JON 01
Ta (ng/g)				
13	4		ITNA	85GAU 04
1740	270		ITNA	79REN 03
Tb (ng/g)				
2	1		RTNA	83TJI 01
60	10		RTNA	80SLO 01
Th (ng/g)				
34	1		ITNA	77NAD 02
35	5		RTNA	80SLO 01
50	12		ITNA	85GAU 04
Ti (ug/g)				
13.7			CPXRF	84KAU 01
Tl (ng/g)				
27		11	ASV	84LIE 01
28		11	ASV	84LIE 01
29		11	FAA	84LIE 01
30		11	ASV	84LIE 01
31		11	ASV	84LIE 01
U (ng/g)				
13	2		RTNA	80SLO 01
15			DNA	84GLA 02
15	0.5		RTNA	78DER 01
18	2		DNA	86GAU 01
18	6	35	DNA	80GLA 04
20	4		DNA	85GAU 04
20	48	R	DNA	81GLA 03
V (ng/g)				
99	14	11	RTNA	82HEY 02
248	6	11	RTNA	82HEY 02
346	18		RTNA	78BYR 01
347	27	11	RTNA	82HEY 02
370	90	11	ICPES	82JON 01
410	60	11	ICPES	82JON 01
450			ITNA	85GAU 04
453	61		ITNA	82HEY 02
470	80		ITNA	77NAD 02
W (ng/g)				
50	10		RTNA	80SLO 01
Yb (ng/g)				
9	1		RTNA	83TJI 01
26	8		ITNA	85GAU 04

TABLE 1575-2: INDIVIDUAL DATA FOR NBS SRM 1575 (cont.)

Conc	Uncer	Com	Method	Reference
Zn (ug/g)				
5			OES	75JON 09
51	9		CPXRF	79REN 02
52	1		ITNA	77NAD 02
53.5	2		RTNA	80SLO 01
56			ICPES	84NAD 01
57			OES	75JON 11
59.2			CPXRF	84KAU 01
60	3	11	ICPES	82JON 01
60.3	1.3		RTNA	77DER 01
61	4	11	ICPES	82JON 01
63	3	11	ICPES	82JON 01
64	4	11	ICPES	82JON 01
64	7		ICPES	79HER 01
65			AA	81ARA 01
65	4	11	ICPES	82JON 01
65	4.6		XRF	83PEL 01
65	6		ITNA	79REN 03
66			OES	75JON 06
67			XRF	80SUZ 02
68			OES	75JON 08
68	5	11	ICPES	82JON 01
69	8.8		ICPES	85LYO 01
71	1		DCPES	79REE 01
71	1	D	DCPES	81REE 01
71	10	11	ICPES	82JON 01
72			OES	75JON 02
72	13		ICPES	85WHI 02
74			OES	75JON 03
74	9	11	ICPES	82JON 01
76	2		ICPES	83SCH 04
78			ICPES	81GOO 01
82			OES	75JON 05
85			OES	75JON 07
86	21	11	ICPES	81MUN 01
87			OES	75JON 01
99	10	D	ICPES	80SCH 08
99	10		ICPES	80SCH 05
110	12		CPXRF	80KIR 01
111	39	11	ICPES	81MUN 01
141			OES	75JON 04

TABLE 1577-1: COMPILED DATA FOR NBS SRM 1577 BOVINE LIVER (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		XRF		OTHER METHODS					
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method	Mean	(n)	Method
Ag	ng/g	60	62 ± 13	(15)	65	40 - 100	66	(2)	66 ± 19	(14)	---		---		---			65	(1)	SSMS
Al	ug/g	---	16 ± 14	(23)	8.2	0.7 - 45.6	---		19 ± 15	(15)	12 ± 12	(5)	---		1.44	(1)	HPLC	3.6	(1)	SSMS
As	ng/g	55 ± 5	55 ± 6	(53)	54	40 - 70	51 ± 5	(13)	55 ± 6	(34)	50	(1)	---		61.5	(2)	ASV	54	(1)	FAE
As	ng/g	---	---		---	---	---		---		---		---		---			100	(1)	GCMES
Au	ng/g	---	2.8 ± 3.0	(7)	1.7	0.058 - 7	---		2.8 ± 3.0	(7)	---		---		---			---		
B	ug/g	---	2.9 ± 0.8	(4)	2.34	2.24 - 4	---		---		4	(1)	---		3.2	(1)	TCGS	2.29	(2)	AE±AF
Ba	ug/g	---	0.94 ± 1.1	(7)	0.22	0.12 - 2.92	---		1.3 ± 1.3	(4)	0.68	(2)	---		0.15	(1)	SSMS	---		
Be	ng/g	17	4	(2)	---	3 - 5	5	(1)	---		3.0	(1)	---		---			---		
Bi	ng/g	---	150	(1)	---	---	---		---		---		---		---			150	(1)	AF
Br	ug/g	---	9.1 ± 0.9	(44)	9	7.35 - 11.1	---		9.1 ± 0.9	(30)	---		9.3 ± 0.9	(13)	---			---		
C	%	---	50.6 ± 1.1	(4)	49.87	49.6 - 52	---		---		---		---		49.74	(2)	CB	51.5	(2)	TCGS
Ca	ug/g	124 ± 6	122 ± 14	(57)	123	87 - 151	118 ± 12	(12)	122 ± 14	(14)	126 ± 10	(13)	123 ± 28	(11)	128	(1)	FAE	117	(2)	DCPES
Ca	ug/g	---	---		---	---	---		---		---		---		108	(1)	CPAA	128	(2)	SSMS
Cd	ng/g	270 ± 40	281 ± 21	(111)	283	230 - 337	281 ± 21	(55)	284 ± 18	(24)	320 ± 40	(9)	---		258 ± 30	(10)	ASV	270	(1)	TCGS
Cd	ng/g	---	---		---	---	---		---		---		---		290 ± 30	(3)	AF	253	(1)	AE±AF
Cd	ng/g	---	---		---	---	---		---		---		---		300	(1)	VOLT	280	(1)	CPAA
Cd	ng/g	---	---		---	---	---		---		---		---		390	(2)	DCPES	240	(2)	SSMS
Ce	ng/g	---	20 ± 4	(5)	21.5	13 - 25	---		22 ± 3	(4)	---		---		---			---		
Cl	ug/g	2700	2680 ± 140	(31)	2685	2410 - 3000	---		2680 ± 120	(22)	---		2760 ± 330	(4)	---			3000	(1)	TCGS
Co	ng/g	180	230 ± 40	(68)	233	160 - 310	220 ± 39	(9)	229 ± 36	(46)	3	(1)	---		310	(2)	14NAA	245	(2)	CHEML
Co	ng/g	---	---		---	---	---		---		---		---		160	(1)	ASV	225	(1)	COLOR
Co	ng/g	---	---		---	---	---		---		---		---		162	(1)	GC	250	(2)	SSMS
Cr	ng/g	88 ± 12	116 ± 52	(49)	123	22 - 280	94 ± 50	(9)	125 ± 50	(30)	62 ± 36	(3)	180	(1)	200	(1)	DCPES	35	(1)	GC
Cs	ng/g	---	17 ± 7	(19)	16	9 - 35	---		16 ± 6	(16)	---		---		---			---		
Cu	ug/g	193 ± 10	190 ± 9	(164)	190	161 - 216	192 ± 7	(46)	190 ± 8	(47)	190 ± 9	(21)	187 ± 12	(24)	195	(1)	AE±AF	196	(2)	POL
Cu	ug/g	---	---		---	---	---		---		---		---		200 ± 11	(5)	ASV	182	(2)	SSMS
Cu	ug/g	---	---		---	---	---		---		---		---		187	(2)	DCPES	198	(2)	CPAA
Cu	ug/g	---	---		---	---	---		---		---		---		197 ± 8	(3)	HPLC	185	(1)	FAE
Dy	ng/g	---	2.9	(2)	---	2.4 - 3.4	---		2.9	(2)	---		---		---			---		
Er	ng/g	---	0.5	(1)	---	---	---		0.5	(1)	---		---		---			---		
Eu	ng/g	---	0.33 ± 0.06	(5)	0.35	0.235 - 0.400	---		0.33 ± 0.06	(5)	---		---		---			---		
F	ng/g	---	80	(2)	---	40 - 120	---		---		---		---		---			80	(2)	ISE
Fe	ug/g	268 ± 8	265 ± 18	(135)	265	205 - 315	265 ± 17	(28)	267 ± 15	(41)	261 ± 12	(21)	263 ± 19	(22)	256	(1)	OES	236	(2)	14NAA
Fe	ug/g	---	---		---	---	---		---		---		---		275	(2)	SSMS	270	(1)	COLOR
Fe	ug/g	---	---		---	---	---		---		---		---		275	(2)	HPLC	265	(1)	GC
Fe	ug/g	---	---		---	---	---		---		---		---		266	(2)	DCPES	266	(2)	FAE
Fe	ug/g	---	---		---	---	---		---		---		---		---			280	(2)	CPAA

TABLE 1577-1: COMPILED DATA FOR NBS SRM 1577 BOVINE LIVER (cont.)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		XRF		OTHER METHODS					
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method	Mean	(n)	Method
Ga	ng/g	---	4	(1)	---	---	---		4	(1)	---		---		---			---		
Gd	ng/g	---	2.1	(2)	---	1.8 - 2.4	---		2.1	(2)	---		---		---			---		
Ge	ng/g	---	< 400		---	---	---		---		---		< 400		---			---		
H	%	---	6.97 ± 0.16	(3)	7	6.8 - 7.12	---		---		---		---		7.12	(1)	CB	6.9	(2)	TCGS
Hf	ng/g	---	4.15	(2)	---	1 - 7.3	---		4.15	(2)	---		---		---			---		
Hg	ng/g	16 ± 2	16.4 ± 1.6	(43)	16	13.7 - 20	16.3 ± 1.7	(18)	16.2 ± 1.0	(22)	---		---		---			15	(1)	MPOES
Ho	ng/g	---	0.25 ± 0.05	(3)	0.25	0.2 - 0.3	---		0.25 ± 0.05	(3)	---		---		---			---		
I	ng/g	180	234 ± 31	(15)	237	180 - 280	---		230 ± 30	(14)	---		---		---			280	(1)	MS
In	ng/g	50	0.07	(2)	---	0.05 - 0.09	---		0.07	(2)	---		---		---			---		
K	%	0.97 ± 0.0	0.98 ± 0.06	(62)	0.9695	0.821 - 1.13	0.99 ± 0.02	(8)	0.98 ± 0.06	(25)	0.99 ± 0.06	(5)	0.96 ± 0.08	(13)	0.97	(1)	FE	0.96	(1)	CPAA
K	%	---	---		---	---	---		---		---		---		1.00	(1)	TCGS	0.73	(2)	SSMS
La	ng/g	---	16 ± 4	(10)	17	10 - 24.5	---		16 ± 4	(10)	---		---		---			---		
Li	ng/g	---	164	(1)	---	---	164	(1)	---		---		---		---			---		
Lu	ng/g	---	0.039	(2)	---	0.039 - 0.039	---		0.039	(2)	---		---		---			---		
Mg	ug/g	604 ± 9	608 ± 41	(50)	602	516 - 700	589 ± 17	(15)	630 ± 50	(13)	610 ± 40	(12)	609	(2)	700	(1)	14NAA	450	(1)	SSMS
Mg	ug/g	---	---		---	---	---		---		---		---		629	(2)	DCPES	609	(1)	AE±AF
Mn	ug/g	10.3 ± 1.0	10.2 ± 0.7	(134)	10.2	8.4 - 12	10.4 ± 0.6	(42)	10.2 ± 0.5	(39)	10.2 ± 0.6	(20)	9.9 ± 0.7	(15)	11.3 ± 1.0	(3)	DCPES	13	(1)	TCGS
Mn	ug/g	---	---		---	---	---		---		---		---		9.9	(1)	COLOR	13	(1)	AE±AF
Mn	ug/g	---	---		---	---	---		---		---		---		9.45	(2)	SSMS	10.2	(1)	ASV
Mo	ug/g	3.4	3.2 ± 0.4	(58)	3.23	2.3 - 4.1	2.8 ± 0.8	(3)	3.3 ± 0.3	(36)	3.0 ± 0.7	(5)	3.3 ± 0.6	(6)	3.39	(1)	POL	3.15	(2)	14NAA
Mo	ug/g	---	---		---	---	---		---		---		---		2.0	(1)	CPAA	2.76	(2)	SSMS
Mo	ug/g	---	---		---	---	---		---		---		---		---			3.36	(2)	COLOR
N	%	10.6 ± 0.6	10.5 ± 0.2	(5)	10.42	10.35 - 10.82	---		---		---		---		10.42	(1)	CB	10.59	(1)	GRAV
N	%	---	---		---	---	---		---		---		---		10.38	(2)	TCGS	10.82	(1)	NT
Na	ug/g	2430 ± 130	2395 ± 200	(57)	2400	1940 - 3010	2440 ± 90	(9)	2390 ± 200	(32)	2550 ± 310	(5)	2000	(1)	2400	(1)	FAE	2420	(1)	FE
Na	ug/g	---	---		---	---	---		---		---		---		1800	(2)	14NAA	3100	(1)	TCGS
Nd	ng/g	---	14 ± 4	(3)	14.5	9 - 18	---		14 ± 4	(3)	---		---		---			---		
Ni	ng/g	---	160 ± 80	(12)	180	50 - 270	92 ± 56	(3)	190 ± 90	(4)	50	(1)	---		227	(1)	VOLT	200	(1)	ASV
Ni	ng/g	---	---		---	---	---		---		---		---		---			195	(1)	GC
P	%	1.1	1.13 ± 0.12	(22)	1.14	0.905 - 1.35	1.07	(2)	1.2 ± 0.2	(3)	1.11 ± 0.10	(12)	1.12 ± 0.21	(4)	1.1	(1)	COLOR	1.1	(1)	14NAA
Pb	ng/g	340 ± 80	350 ± 50	(69)	350	240 - 490	340 ± 40	(40)	---		410 ± 80	(5)	360	(2)	500	(1)	OES	280	(2)	SSMS
Pb	ng/g	---	---		---	---	---		---		---		---		343 ± 45	(10)	ASV	375	(2)	POL
Pb	ng/g	---	---		---	---	---		---		---		---		310	(1)	VOLT	440	(2)	DCPES
Pb	ng/g	---	---		---	---	---		---		---		---		---			330.5	(2)	IDMS
Pr	ng/g	---	4.2 ± 0.3	(3)	4	4 - 4.6	---		4.2 ± 0.3	(3)	---		---		---			---		
Pt	pg/g	---	70	(1)	---	---	---		70	(1)	---		---		---			---		
Rb	ug/g	18.3 ± 1.0	18.4 ± 1.2	(58)	18.7	15.1 - 21.2	20	(2)	18.3 ± 0.8	(35)	---		18.0 ± 1.8	(15)	16.6	(2)	SSMS	16.55	(2)	14NAA

TABLE 1577-1: COMPILED DATA FOR NBS SRM 1577 BOVINE LIVER (cont.)

ELE	UNITS	NBS	CONSENSUS	MEDIAN	RANGE	AA	NAA	ICPES	XRF	OTHER METHODS					
		Mean ± SD	Mean ± SD (n)			Mean ± SD (n)	Mean ± SD (n)	Mean ± SD (n)	Mean ± SD (n)	Mean ± SD	(n)	Method	Mean	(n)	Method
S	ug/g	---	7900 ± 1000 (11)	7440	6300 - 9500	---	---	8020 ± 1110 (3)	8600 ± 900 (4)	6300	(1)	NM	8150	(1)	CB
S	ug/g	---	---	---	---	---	---	---	---	---			7200	(2)	TCGS
Sb	ng/g	5	9.6 ± 4.7 (21)	10	4 - 26	5 (1)	9.4 ± 4.4 (19)	---	---	---			---		
Sc	ng/g	---	0.9 ± 0.3 (8)	1	0.4 - 1.2	---	1.08 ± 0.08 (6)	---	---	---			---		
Se	ug/g	1.1 ± 0.1	1.09 ± 0.08 (172)	1.1	0.9 - 1.3	1.08 ± 0.08 (44)	1.10 ± 0.07 (81)	1.02 ± 0.14 (7)	1.12 ± 0.19 (10)	1.11	(2)	SSMS	0.98	(1)	GCMES
Se	ug/g	---	---	---	---	---	---	---	---	1.09 ± 0.10	(9)	FLUOR	1.14	(2)	COLOR
Se	ug/g	---	---	---	---	---	---	---	---	1.17 ± 0.10	(3)	CSV	0.98	(1)	DCPES
Se	ug/g	---	---	---	---	---	---	---	---	1.12 ± 0.02	(6)	ASV	1.07	(1)	GC-MS
Se	ug/g	---	---	---	---	---	---	---	---	1.14 ± 0.07	(4)	GC	---		
Se(VI)	ug/g	---	0.305 (2)	---	0.3 - 0.31	---	---	---	---	---			0.31	(1)	COLOR
Se(VI)	ug/g	---	---	---	---	---	---	---	---	---			0.3	(1)	GC
Si	ug/g	17	17.5 ± 1.3 (3)	16.79	16.7 - 19	---	16.7 (2)	---	---	---			19	(1)	SSMS
Sm	ng/g	---	1.6 ± 0.3 (7)	1.6	1 - 2	---	1.6 ± 0.3 (7)	---	---	---			---		
Sn	ng/g	---	18 ± 5 (4)	20	10 - 21	10 (1)	20.3 ± 0.6 (3)	---	---	---			---		
Sr	ng/g	140	170 ± 70 (5)	160	100 - 300	160 (1)	150 (1)	230 (2)	---	---			100	(1)	SSMS
Ta	ng/g	---	3 (1)	---	---	---	3 (1)	---	---	---			---		
Tb	ng/g	---	0.8 ± 1.0 (3)	0.18	0.17 - 2	---	0.8 ± 1.0 (3)	---	---	---			---		
Te	ng/g	---	90 (1)	---	---	---	90 (1)	---	---	---			---		
Th	ng/g	---	4.9 (2)	---	3 - 6.8	---	4.9 (2)	---	---	---			---		
Ti	ug/g	---	2.7 ± 1.5 (6)	2	0.7 - 4.7	---	---	1.7 (1)	---	3.2	(1)	14NAA	2.0	(1)	CPAA
Ti	ug/g	---	---	---	---	---	---	---	---	4.25	(2)	SSMS	0.7	(1)	COLOR
Tl	ng/g	50	2 (1)	---	---	---	---	---	---	---			2.0	(1)	ASV
Tm	ng/g	---	0.12 (2)	---	0.1 - 0.15	---	0.12 (2)	---	---	---			---		
U	ng/g	0.8	1.0 (2)	---	0.99 - 1.0	---	1.0 (2)	---	---	---			---		
V	ng/g	---	58 ± 8 (13)	60	33 - 66.2	55 (1)	61 ± 3 (8)	75 (2)	---	---			15	(1)	COLOR
W	ng/g	---	8 ± 5 (5)	5	3.8 - 15	---	9 ± 5 (4)	---	---	---			---		
Y	ug/g	---	< 1	---	---	---	---	---	< 1	---			---		
Yb	ng/g	---	0.35 ± 0.11 (3)	0.2850	0.28 - 0.48	---	0.35 ± 0.11 (3)	---	---	---			---		
Zn	ug/g	130 ± 13	130 ± 7 (188)	130	112 - 150	129 ± 7 (40)	129 ± 6 (67)	132 ± 6 (24)	133 ± 10 (22)	130	(1)	OES	132	(1)	GC
Zn	ug/g	---	---	---	---	---	---	---	---	136 ± 6	(4)	DCPES	134	(2)	FAE
Zn	ug/g	---	---	---	---	---	---	---	---	129 ± 10	(3)	ASV	132	(2)	AF
Zn	ug/g	---	---	---	---	---	---	---	---	120 ± 3	(3)	POL	136	(1)	HPLC
Zn	ug/g	---	---	---	---	---	---	---	---	134.3 ± 0.6	(3)	AE±AF	78	(1)	14NAA
Zn	ug/g	---	---	---	---	---	---	---	---	137 ± 10	(3)	SSMS	138	(2)	CPAA
Zr	ug/g	---	2.3 ± 1.8 (4)	1.6	0.09 - 4	---	---	---	---	4	(1)	CPAA	1.6	(1)	SSMS

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ag (ng/g)				
< 130		L	RTNA	76GAU 01
5		17	UU	74MAS 01
40	8		RTNA	79WAR 02
49	16		IENA	86CHI 01
51	11		RTNA	77LIE 01
51	11		RTNA	75LIE 01
53	17		ITNA	86CHI 01
58	3		ITNA	86GRE 01
60			ITNA	77OSB 01
60	1		FAA	75PIC 01
65	5		RTNA	80SLO 01
65	10		SSMS	77PAU 01
66	21		ITNA	79CHA 04
68	6		ITNA	78BEH 01
72	13		AA	80JAC 01
80	6		ITNA	79CHA 02
91	26		ITNA	73COR 01
100	10		ITNA	84ALK 01
100	30		ITNA	80MIC 01
194		17	UU	74MAS 01
300	100	34	CPXRF	78JOL 01
400			OES	75BOL 02
2000	600		RTNA	74SCH 03
Al (ug/g)				
< 3			ITNA	86GRE 01
< 15		L	ICPES	78CAP 01
< 50			CPXRF	84KAU 01
< 80		L	14NAA	81WIL 01
< 80		L	14NAA	81WIL 02
0.7	0.2		IENA	85GLA 02
1.44	0.1		HPLC	85BON 01
1.8	0.2		ITNA	77GOO 01
2.21	0.15		ITNA	82EHM 01
3.6		11	SSMS	85VOS 01
5			ICPES	79MCQ 01
6	2		ICPES	79ABE 01
6	3		ITNA	84GLA 02
6.1			ITNA	84GLA 11
7		17	UU	74MAS 01
8	0.6	11	ICPES	81BLA 02
8.2	0.8	11	ICPES	81BLA 02
11.3	2.9	6	ITNA	74HOF 01
15.3	1.1		ITNA	80SLO 01
20.4	2.9	6	ITNA	74HOF 01
20.8	0.7		RTNA	77BUO 01
23.4	0.6		RTNA	79WAR 02
23.6	2		ITNA	79CHA 02
30	65	RD	ITNA	79IMA 03
30	65	R	ITNA	79IMA 01

Conc	Uncer	Com	Method	Reference
Al (ug/g) cont.				
34.4	1.4		RTNA	80WOI 01
34.6			ICPES	84NAD 01
37	6		ITNA	77ZIK 01
42	13		ITNA	77HAM 01
45.6			ITNA	73NAD 01
65			ITNA	78CAP 01
As (ng/g)				
23	12		HAA	82TAM 01
30	15		IENA	78WAN 01
40	10		RTNA	75ABU 01
40	10		RTNA	80SLO 01
41			HAA	79EVA 01
43.3			HAA	77IHN 01
46	2		RTNA	79HOE 01
47	5		HAA	82SUB 01
49	6		HAA	76FIO 01
50			HAA	78WEL 01
50			ICPES	84MIA 01
50	3		ITNA	86GRE 01
50	10		HAA	80AGE 02
50	10		HAA	74LOO 01
52	3	34	HAA	78FLA 01
52	3		AA	79FLA 02
52	7		ITNA	79CHA 02
52.9	1.9	H	RTNA	79ORV 01
53	2	7	RTNA	80GAL 02
53	2	7	RTNA	81KUC 01
53	2		RTNA	84SCH 04
54			RTNA	85TIA 01
54		H	FAE	79FEL 01
54	2		RTNA	79WAR 02
54	2	6	HAA	81KAH 01
54	4	7	RTNA	80GAL 02
54	4		RTNA	82BYR 01
54	4		RTNA	78GAL 01
54	5		RTNA	79MAY 01
54	5		RTNA	74HEN 01
55	1		RTNA	80BYR 01
55	3	7	RTNA	80GAL 02
55	3		RTNA	77GIL 03
55	3		NAA	77GIL 01
56	3	6	HAA	81KAH 01
56	3		HAA	81UTH 01
56	4		RTNA	77LIE 01
56	4		RTNA	75LIE 01
56.6	1.2		RTNA	73DAM 01
56.6	1.2		NAA	74HEY 01
57			ASV	78DAV 01
58	3		RTNA	79HEI 04

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference
As (ng/g) cont.				
58	3		RTNA	79ROS 02
58.5	9		NAA	76GUZ 01
59			RTNA	75STE 02
59		7	RTNA	81KUC 01
59	9		AA	83RAP 01
60	6		RTNA	83DAN 01
63	4		RTNA	74ORV 01
63	5		RTNA	85GAU 04
64		17	UU	74MAS 01
66			ASV	81LEE 01
66	23		RTNA	74SCH 03
69		17	UU	74MAS 01
70	10		RTNA	83BRA 01
80	30		RTNA	77TJI 01
100			ITNA	77OSB 01
100	10		GCMES	75TAL 01
150			ICPES	80HAA 01
200	300	6	CPXRF	77WIL 03
280	100	34	CPXRF	78JOL 01
290	110		ICPES	80HAA 01
500			FAA	78CAP 01
600	500	6	CPXRF	77WIL 03
Au (ng/g)				
<	0.5	L	RTNA	80SLO 01
0.058	0.013		RTNA	82ZEI 01
0.083	0.021		RTNA	84TJI 01
0.23	0.16		RTNA	77TJI 01
1.7	0.4		RTNA	77KUS 01
4.9	0.8		RTNA	74SCH 03
6	1		ITNA	79CHA 02
7	0.8		RTNA	79WAR 02
29.2	2.1		RTNA	77NAD 01
B (ug/g)				
2.24		6	AE+AF	74DAU 01
2.34		6	AE+AF	74DAU 01
3.2	0.2		TCGS	79FAI 01
4	1		ICPES	79ABE 01
Ba (ug/g)				
<	20	L	14NAA	81WIL 02
<	30	L	ITNA	78CAP 01
0.12	0.13		RTNA	76GAU 01
0.13			ICPES	78DAH 01
0.15		11	SSMS	85VOS 01
0.22	0.02		RTNA	79WAR 02
1.24			ICPES	84NAD 01
1.8	0.39		RTNA	77GUI 03
2.92			ITNA	73NAD 01

Conc	Uncer	Com	Method	Reference
Be (ng/g)				
<	3	L	ICPES	82SCH 01
<	60	L	ICPES	78CAP 01
3	1	6	ICPES	82SCH 01
5	3		FAA	75OWE 01
17	4		FLUOR	77WIC 01
Bi (ng/g)				
150			AF	85NAR 02
Br (ug/g)				
4.3		17	UU	74MAS 01
4.7	0.8		CPXRF	77RIN 01
6.1	0.6		CPXRF	77WIL 02
7.35		17	UU	74MAS 01
7.4	0.5		EXRF	80DYC 01
7.7	0.5	5	ITNA	80HOE 01
7.8	0.1	5	IENA	79GLA 02
8.0	0.1	5	IENA	79GLA 02
8.0	0.5		RTNA	76GAU 01
8	1		RTNA	77TJI 01
8.22	0.4		RTNA	79WAR 02
8.23	0.45		IENA	86CHI 01
8.4	0.6		ITNA	84GLA 02
8.5	1		ITNA	79CHA 02
8.5	1.3		IENA	84GLA 11
8.5	9.9	R	ITNA	79IMA 01
8.5	9.9	RD	ITNA	79IMA 03
8.56			CPXRF	84KAU 01
8.6	0.4		NAA	78GAN 01
8.8	0.3		ITNA	84GLA 11
8.8	0.3	5	ITNA	80HOE 01
8.8	0.4		EXRF	79GIA 01
8.8	1.4		EXRF	77NIE 01
8.9	2.1		ITNA	77HAM 01
9			IENA	85GAU 04
9.0	0.6		ITNA	77JUR 02
9.0	0.6		ITNA	78BEH 01
9.0	0.9		ITNA	86GRE 01
9	1		CPXRF	78VIS 01
9.3		1	IENA	79KUC 01
9.3	0.8		ITNA	80MAE 01
9.3	3		CPXRF	79REN 02
9.34	0.82		ITNA	74DON 01
9.37			ITNA	73NAD 01
9.4	0.4		XRF	77SMY 01
9.5			ITNA	80CRE 01
9.5	1	6	CPXRF	77WIL 03
9.6	0.7		CPXRF	85CLA 01
9.7		1	IENA	79KUC 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference
Br (ug/g)				
9.7	0.5		CPXRF	84BIS 01
9.8			ITNA	79KUC 01
9.8	0.3		RTNA	80WOI 01
10	0.7		CPXRF	82ROE 02
10	1		CPXRF	80MAE 01
10.4			ITNA	82AKA 01
11			ITNA	78CAP 01
11	1	5	ITNA	80TOU 01
11	2.3		CPXRF	80KIR 01
11.1	1.6		RTNA	74SCH 03
12	4		ITNA	77ZIK 01
13.4		17	UU	74MAS 01
22	10		ITNA	77ZIK 01
C (%)				
49.6	1.5	35	CB	79GLA 04
49.87	0.07		CB	80SCH 02
51	2	35	TCGS	79GLA 04
52	2		TCGS	79FAI 01
Ca (ug/g)				
30			AE+AF	79ULL 01
68	6		AA	82HAR 01
71	23		EXRF	77NIE 01
80	30		ITNA	74WES 01
87	13		ICPES	85WHI 02
90	13		CPXRF	80MAE 01
94	112		AA	79MAN 01
100			CPXRF	77WIL 02
100	20		RTNA	76GAU 01
100	26		ITNA	78FUR 01
101			AA	79LOC 01
103	12		CPXRF	79MAN 01
104		17	UU	74MAS 01
106	3.2		AA	74WES 01
107			ITNA	82AKA 01
107	232	RD	ITNA	79IMA 03
107	232	R	ITNA	79IMA 01
108	9		CPAA	77ZIK 01
110	1		ICPES	85WOL 01
110	30		ITNA	86GRE 01
114	2	1	ICPES	78SUD 01
115	12		RTNA	80CAN 01
116	2		AA	80IID 01
116	2	1	AA	77UCH 02
116	3.4	6	DCPES	83FRA 01
118	4.9	6	DCPES	83FRA 01
118	9	1	ICPES	78SUD 01

Conc	Uncer	Com	Method	Reference
Ca (ug/g) cont.				
119	2	1	AA	77UCH 02
120		11	SSMS	85VOS 01
120	2	11	ICPES	82JON 01
121	3	11	ICPES	82JON 01
122			ICPES	80HAA 01
122	7		ICPES	79MCQ 01
123	5		FAA	84HAR 02
123	17		AA	79MCQ 01
124	10		ITNA	79CHA 02
124.67	8.48		NAA	76GUZ 01
125	8		ITNA	75PIE 01
125	13		RTNA	79WAR 02
127	5		AA	75HIN 01
127	7		AA	80UCH 01
127	12		ICPES	79MCQ 02
128	2		FAE	83MAR 04
129	12	12	FAA	85CAR 02
130	10		ITNA	77ZIK 01
130	12		ITNA	84ALK 01
130	30		ITNA	84GLA 02
131			RTNA	75STE 02
131	5		WXRF	84ALK 01
131	8		CPXRF	78VIS 01
131	9		CPXRF	80KIR 01
133			ICPES	84NAD 01
134	18		ICPES	79ABE 01
134	21	12	FAA	85CAR 02
135		11	SSMS	85VOS 01
135			ICPES	78DAH 01
137.5	18		PAA	76KAT 04
140			ICPES	78CAP 01
140	7		CPXRF	84BIS 01
143	19		CPXRF	85CLA 01
143	42		ICPES	84BLA 01
150			ITNA	84GLA 11
151	7.4		CPXRF	81ROB 02
158	15		EXRF	80DYC 01
210			CPXRF	84KAU 01
309			ITNA	78CAP 01
Cd (ng/g)				
200		11	SSMS	85VOS 01
210	20	11	ASV	84ADE 03
210	42		ASV	79STO 01
230		11	FAA	75BLO 01
240		17	UU	74MAS 01
240	10		FAA	82SUZ 01
246	56		NAA	76GUZ 01
250		11	FAA	75BLO 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Cd (ng/g) cont.

Conc	Uncer	Com	Method	Reference
250			AA	78EVA 01
250			FAA	83ATS 01
250	10	11	ASV	84ADE 03
250	20	11	ASV	84ADE 03
250	20		RTNA	83BRA 01
250	20		AF	75EPS 01
250	25		AA	82EVA 01
250	30		VV	79CHA 02
253	24		AE+AF	74RAI 02
253	24		FAA	82ATS 01
260		11	ASV	81DAN 01
260			FAA	82AKA 01
260			FAA	75SLA 01
260	10		RTNA	74ORV 01
260	10		FAA	84RAB 01
260	20		FAA	84ROS 01
260	20	11	ASV	84ADE 03
260	20		AA	74ULL 01
260	20		FAA	79DAB 02
260	30		RTNA	74SCH 03
260	30		FAA	78PIE 01
260	30		RTNA	80SLO 01
266	20		FAA	74RAI 02
266	27		RTNA	79MAY 01
269	13		RTNA	74ROO 01
270			AA	77FRI 01
270		17	UU	74MAS 01
270		17	UU	74MAS 01
270		17	UU	74MAS 01
270	2		FAA	83STE 05
270	10		ICPES	83SCH 04
270	10	11	AA	81BLA 03
270	20	11	ASV	84ADE 03
270	20		AA	85ADE 02
270	20		AA	79WAR 01
270	20		AA	75EPS 01
270	30		AA	79LAK 01
270	50		FAA	81KNA 01
270	60		TCGS	79FAI 01
270	80		FAA	74GRO 01
275	5		FAA	78HUD 01
280			ASV	74COP 01
280			FAA	82HOE 01
280			AA	84KAN 01
280			RTNA	85TIA 01
280	20		SSMS	77PAU 01
280	30		AA	80SCH 05
280	30	D	FAA	80SCH 08
280	50	11	AA	81BLA 03
280	50		ICPES	84MIA 01

Cd (ng/g) cont.

Conc	Uncer	Com	Method	Reference
280	70		AA	83RAP 01
280	70		CPAA	85CAN 01
283			RTNA	75HAL 01
283		17	UU	74MAS 01
283	50		FAA	79STO 01
288	26		FAA	81ZAU 01
288	29		RTNA	80GRE 01
288	35		RTNA	75LIE 01
288	35		RTNA	77LIE 01
290		17	UU	74MAS 01
290		17	UU	74MAS 01
290		14	FAA	80CHA 08
290		14	FAA	80CHA 08
290		11	ASV	81DAN 01
290			FAA	80JAR 01
290	10		FAA	80LEG 01
290	10		AA	84HUD 01
290	10	D	AA	84HUD 03
290	10		RTNA	77BAJ 02
290	13	7	AA	73TAL 01
290	20		NAA	76DER 01
290	20		AA	79FLA 02
290	30		RTNA	74HEN 01
290	30		RTNA	79DER 01
290	30		FAA	79WAR 01
290	30		FAA	84GLA 02
290	30		ICPES	84BLA 01
293	9		ITNA	86GRE 01
300			ASV	82GAJ 01
300			ICPES	80HAA 01
300	18	7	AA	73TAL 01
300	18		FAA	74TAL 01
300	20		RTNA	78GAL 01
300	20		RTNA	77TJI 01
300	20	7	RTNA	80GAL 02
300	20		VOLT	84OST 01
300	23		AF	75WOR 01
300	25		FAA	74TAL 01
300	25	7	AA	73TAL 01
300	30		RTNA	76GAU 01
300	40	7	RTNA	81KUC 01
300	50		AA	75HIN 01
300	70		AA	80AGE 01
300	700		AA	76LAN 01
300	800	6	FAA	76LAN 01
310			RTNA	75STE 02
310		7	RTNA	81KUC 01
310		11	FAA	81DAN 01
310			ICPES	85NAR 02
310			AF	85NAR 02

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference
Cd (ng/g) cont.				
310	20		FAA	78GRO 01
310	40		ICPES	82AZI 01
310	50		FAA	80POL 01
320			FAA	83ATS 01
320		11	FAA	81DAN 01
320	40	11	AA	81BLA 03
320	130	6	FAA	76LAN 01
337	58		RTNA	79PLA 01
350	50	11	ICPES	82JON 01
360	28		ICPES	82EVA 01
380	20	6	DCPES	83FRA 01
390	70	11	ICPES	82JON 01
400	40	6	DCPES	83FRA 01
550	450		AA	79MON 01
560	130	34	CPXRF	78JOL 01
Ce (ng/g)				
13		17	UU	74MAS 01
18	4		RTNA	80SLO 01
21.5			RTNA	77LAU 02
22			RTNA	82LAU 01
25	3		RTNA	83TJI 01
46	14		RTNA	76GAU 01
74	28		RTNA	86TSU 01
Cl (ug/g)				
1880		17	UU	74MAS 01
2155	170	34	CPXRF	78JOL 01
2410	600		EXRF	77NIE 01
2460		35	ITNA	81GLA 04
2480		17	UU	74MAS 01
2500	130	35	ITNA	81GLA 03
2530			ITNA	78CAP 01
2542	300		ITNA	77ZIK 01
2550	100		ITNA	74WES 01
2570	3110	R	ITNA	79IMA 01
2570	3110	RD	ITNA	79IMA 03
2590		17	UU	74MAS 01
2610		17	UU	74MAS 01
2610	200		ITNA	79CHA 02
2615	192		RTNA	74SCH 03
2632	67		ITNA	77GUI 02
2632	67		NAA	76MIL 02
2650	100		ITNA	80SLO 01
2680	80		RTNA	79WAR 02
2685	165		PAA	76KAT 04
2690	170		EXRF	80DYC 01
2700	70		ITNA	84GLA 02
2700	300		ITNA	84GLA 11
2715	151		ITNA	84ALK 01
2740			CPXRF	84KAU 01
2750			ITNA	73NAD 01
2750	110		ITNA	78FUR 01
2760			ITNA	82AKA 01
2770	40		ITNA	86GRE 01
2793	294.4		NAA	76GUZ 01
2800	150		IENA	84GLA 11
2830	200		NAA	78GAN 01
2900			ITNA	80CRE 01
3000	100		TCGS	79FAI 01
3000	190		ITNA	77HAM 01
3200	800		CPXRF	79REN 02
3500	200		14NAA	81WIL 02
11663		17	UU	74MAS 01
Co (ng/g)				
120		17	UU	74MAS 01
160	10		ASV	85ADE 01
162			GC	85MEY 02
170			ITNA	73NAD 01
170	10		NAA	78GAN 01
170	20		ITNA	79CHA 02
174		17	UU	74MAS 01
178		14	FAA	80CHA 08
178	5		RTNA	79WAR 02
180	10		RTNA	77GIL 03
180	10		NAA	77GIL 01
180	30		ITNA	79WAR 01
182		14	FAA	80CHA 08
188	27		NAA	76GUZ 01
190		1	IENA	79KUC 01
190	20	6	ITNA	74BEC 01
190	20		AA	84KAN 01
200		11	SSMS	85VOS 01
200	16		FAA	74WES 01
200	40		ITNA	80LAK 01
203			RTNA	75STE 02
210			ITNA	79KUC 01
210	10		ITNA	86CHI 01
210	20		ITNA	74WES 01
210	30		AA	79FLA 02
210	40		FAA	79WAR 01
217	13		ITNA	81KRI 01
220			RTNA	75ABU 01
223	11		RTNA	75LIE 01
223	11		RTNA	77LIE 01
225		17	UU	74MAS 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference
Co (ng/g) cont.				
225	7		COLOR	82KIR 01
230	20		RTNA	80SLO 01
230	20	6	ITNA	74BEC 01
230	100		ITNA	77ZIK 01
233	5		RTNA	79DER 01
236	9		ITNA	80MIC 01
240			CHEML	79MIL 01
240			ITNA	80CRE 01
240	10		ITNA	73COR 01
240	10		ITNA	84ALK 01
240	14		IENA	75MAZ 01
240	20		RTNA	74HEN 01
240	30		ITNA	78BEH 01
240	37		ITNA	77HAM 01
245		7	RTNA	81KUC 01
246	14		RTNA	77TJI 01
247	31		ITNA	81MOL 01
248	25		ITNA	79ZEI 01
250			ITNA	82AKA 01
250	30		CHEML	81MAR 01
252	8		ITNA	86GRE 01
257	2		ITNA	74LIN 01
260		17	UU	74MAS 01
260	7	7	RTNA	81KUC 01
260	10		ITNA	79SAT 01
260	21		RTNA	76GAU 01
265			AA	79ABU 01
269	30		AA	80JAC 01
275			FAA	82HOE 01
280			NAA	79MIL 01
290			ITNA	78CAP 01
300			ICPES	80HAA 01
300			ITNA	77OSB 01
300		11	SSMS	85VOS 01
300	70		IENA	86CHI 01
310	60		RTNA	74SCH 03
310	120		14NAA	81WIL 02
310	120		14NAA	81WIL 01
340		17	UU	74MAS 01
360	60		ITNA	78FUR 01
370	60		RTNA	77MEL 01
390		17	UU	74MAS 01
400			FAA	75SLA 01
410	120		RTNA	77KUS 01

Conc	Uncer	Com	Method	Reference
Cr (ng/g)				
22	10		ICPES	81BLA 01
35	3		GC	81BLA 01
35	4	11	FAA	80KUM 01
44.9	5	11	RTNA	76PIE 01
51		17	UU	74MAS 01
53	9		FAA	74WOL 01
60	12		AA	80JAC 01
60	30		RTNA	74SCH 03
61	3	11	FAA	80KUM 01
72	8	11	ICPES	81BLA 02
72	13		ITNA	86GRE 01
74	5		RTNA	77LIE 01
78.9		11	NAA	79VER 01
80.6		11	NAA	79VER 01
85	9		RTNA	78GAL 01
85	9	7	RTNA	80GAL 02
88		7	RTNA	81KUC 01
88	8	11	FAA	80KUM 01
92	9	11	ICPES	81BLA 02
92	10	7	RTNA	81KUC 01
94	8	7	FAA	80CHA 01
94.8	19.5	11	RTNA	76PIE 01
96	8		RTNA	79TJI 01
98	5		RTNA	75LIE 01
115	42		RTNA	79PLA 01
120	40		AA	79FLA 02
120	70		ITNA	78BEH 01
123	6		RTNA	77LIE 01
130		17	UU	74MAS 01
130			ITNA	80CRE 01
130	30		RTNA	78GOE 01
130	50		RTNA	77TJI 01
133	12		ITNA	80MIC 01
140		17	UU	74MAS 01
144	23	7	FAA	80CHA 01
150		17	UU	74MAS 01
150	10		NAA	78GAN 01
150	30		ITNA	74DON 01
160	5	11	RTNA	78MCC 01
160	60		RTNA	76GAU 01
163	10		RTNA	74MCC 01
180	100		CPXRF	78VIS 01
190	10		FAA	79WAR 01
200	20		DCPES	79REE 01
200	20	D	DCPES	81REE 01
210	2	11	RTNA	78MCC 01
210	30		ITNA	78MCC 01
210	31		ITNA	74MCC 01
210	40		ITNA	79WAR 01
210	70		RTNA	79WAR 02
280	200		ITNA	79SAT 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference
Cr (ng/g) cont.				
400	500	11	ICPES	82JON 01
400	500	11	ICPES	82JON 01
490		17	UU	74MAS 01
500	3500	R	ITNA	73NAD 01
540		17	UU	74MAS 01
600			ITNA	79KUC 01
870	60		CHEML	74LI 01
1000	400		FAE	83MAR 04
1000	600	11	RTNA	76STE 01
1160	600		ITNA	76STE 01
1300		17	UU	74MAS 01
1400	800	11	RTNA	76STE 01
1570		17	UU	74MAS 01
1600		11	SSMS	85VOS 01
1600	800	11	RTNA	76STE 01
1700	900	11	RTNA	76STE 01
1900	1000	11	RTNA	76STE 01
2000		11	SSMS	85VOS 01
2400	700		CPXRF	77WIL 02
2700			FAA	83ATS 01
Cs (ng/g)				
9	4		ITNA	86GRE 01
10	2		ITNA	80MIC 01
11.5	1		ITNA	81KRI 01
12			ITNA	81MOL 01
13	1		ITNA	77JUR 02
13	1		ITNA	78BEH 01
14	2		RTNA	75LIE 01
14.9	2.2		RTNA	77LIE 01
15		17	UU	74MAS 01
15	2		RTNA	79WAR 02
16	3		ITNA	79SAT 01
16	4		RTNA	76GAU 01
18	9		ITNA	73COR 01
19.2		17	UU	74MAS 01
20	5		ITNA	86CHI 01
23	8		IENA	86CHI 01
24			ITNA	80CRE 01
30	6		ITNA	84ALK 01
35			ITNA	73NAD 01
40		11	SSMS	85VOS 01
44		17	UU	74MAS 01
130	30		RTNA	77MEL 01
180	10	7	RTNA	80GAL 02

Conc	Uncer	Com	Method	Reference
Cu (ug/g)				
87		11	SSMS	85VOS 01
93	12	6	ITNA	74HOF 01
124		11	XRF	83PEL 01
138	18.8		FAA	74GRO 01
146	40		ITNA	77ZIK 01
148	19		FAA	77FUJ 01
151	191	RD	ITNA	79IMA 03
151	191	R	ITNA	79IMA 01
153			CPXRF	78UEM 01
154	7		ICPES	85FAS 01
154	43		CPAA	77ZIK 01
161	12		RTNA	77KUS 01
167		17	UU	74MAS 01
167			XRF	80SUZ 02
168	8	1	ICPES	78SUD 01
169	7	12	FAA	85CAR 02
170	8		RTNA	80SLO 01
173		17	UU	74MAS 01
173.5	13.9	34	CPXRF	78JOL 01
173.6	18.5		RTNA	83DAN 01
174	2		EXRF	80DYC 01
175		17	UU	74MAS 01
176	9	6	ITNA	74HOF 01
177	1		AA	79MCQ 01
177	7		RTNA	77TJI 01
177	19	5	ITNA	80TOU 01
179	19		ICPES	84BLA 01
180		17	UU	74MAS 01
180	3		AA	73TAL 01
180	8	11	ICPES	81BLA 02
180	15		CPXRF	84BIS 01
181		11	SSMS	85VOS 01
181		17	UU	74MAS 01
181	124		ITNA	82KIM 01
182	6	1	ICPES	78SUD 01
182	8	7	RTNA	81KUC 01
182	13		CPXRF	81SAI 01
183			ICPES	84NAD 01
183	2	7	RTNA	84FAR 02
183	8	35	RTNA	77GLA 01
183	8		PAA	76WIL 01
183	19		CPXRF	79MAN 01
184	5		SSMS	77PAU 01
184	6	12	FAA	85CAR 02
185			FAA	78CAP 01
185	3	7	RTNA	84FAR 02
185	3.3	6	DCPES	83FRA 01
185	6.8	11	RTNA	74WES 01
185	7		RTNA	78GAL 01
185	7	7	RTNA	80GAL 02
185	8		FAE	83MAR 04

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference
Cu (ug/g) cont.				
185	9	11	ICPES	82JON 01
185	14		AA	83RAP 01
186			ITNA	84GLA 11
186	2		ICPES	79MCQ 02
186	5.2	D	AA	84HUD 03
186	5.2		AA	84HUD 01
186	5.5	11	FAA	74WES 01
186	5.5	6	CPXRF	77WIL 03
186	16		EXRF	77NIE 01
187			CPXRF	84KAU 01
187		7	RTNA	81KUC 01
187	2	2	FAA	84MIL 01
187	2.3		AA	80AGE 01
187	4	11	ICPES	81BLA 02
187	6		ITNA	78FUR 01
187	8		RTNA	75LIE 01
187	8		RTNA	77LIE 01
187	13		ITNA	74DON 01
187.4	15.5		AA	79MON 01
188		11	XRF	83PEL 01
188	1		ICPES	79MCQ 01
188	3		RTNA	74HEN 01
188	6		AA	79FLA 02
188	6		HPLC	85SAI 01
188	9		AA	75HIN 01
188	9.8	11	FAA	74WES 01
188	10		RTNA	79WAR 02
188	10		ITNA	79WAR 01
189			ITNA	82AKA 01
189		11	XRF	83PEL 01
189	2	1	AA	77UCH 02
189	2	1	AA	77UCH 02
189	2		AA	80IID 01
189	3.4	6	DCPES	83FRA 01
189	4	11	ICPES	82JON 01
189	4		CPXRF	81ROB 02
189	6		FAA	81CLE 01
189	7		ICPES	78JAC 01
189	12		CPXRF	80KIR 01
189	20		EXRF	84KNA 01
190		11	AA	81MOH 01
190	1		RTNA	80WOI 01
190	2		FAA	84HAR 02
190	3		FAA	79WAR 01
190	8		VV	80SCH 05
190	10		ICPES	79ABE 01
190	14		ITNA	84ALK 01
190	15		ASV	81DOG 01
190	24		ITNA	77HAM 01
191		6	NAA	72SIN 01
191		14	FAA	80CHA 08

Conc	Uncer	Com	Method	Reference
Cu (ug/g) cont.				
191		11	FAA	81DAN 01
191		11	XRF	83PEL 01
191	6.2	11	RTNA	74WES 01
191	9		CPXRF	85CLA 01
191	10.5		NAA	76GUZ 01
191	34		XRF	77SMI 04
192	4		EXRF	79GIA 01
192	4		FAA	81CLE 02
192	6		ITNA	86GRE 01
192	8		ICPES	80SCH 08
192	9	6	FAA	76LAN 01
192	26		ICPES	84ZER 01
193		11	FAA	81DAN 01
193	1		ICPES	85WOL 01
193	10		FAA	80LON 01
193	14		RTNA	77GIL 03
193	14		NAA	77GIL 01
193	14	7	RTNA	80GAL 02
194		17	UU	74MAS 01
194		17	UU	74MAS 01
194			FAA	75SLA 01
194	1		AA	75ABU 01
194	3		ASV	85ADE 01
194	4		AA	82HAR 01
194	6		ICPES	82EVA 01
194	13	6	CPXRF	77WIL 03
194	31		AA	79LAK 01
195		6	POL	72SIN 01
195			AE+AF	79ULL 01
195	3		AA	79WAR 01
195	4		AA	80UCH 01
195	5		RTNA	76GAU 01
195	10		ICPES	81KNA 01
196			ASV	83HOL 01
196		14	FAA	80CHA 08
196			RTNA	85TIA 01
196	6	6	FAA	76LAN 01
196	8		CPXRF	77WIL 02
196	9		FAA	75SME 01
196	9		AA	81KRI 01
196	14.7		RTNA	79PLA 01
196	28		RTNA	82KIM 01
197			NAA	78GAN 01
197	4		ITNA	79SAT 01
197	11	2	FAA	84MIL 01
197	13	6	POL	72SIN 01
197	16		CPXRF	80MAE 01
198			AA	80EVA 01
198	7		AA	82EVA 01
198	9		ITNA	79CHA 02
199	6		ITNA	80MAE 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference
Cu (ug/g) cont.				
199	12		ITNA	84GLA 02
200		11	AA	81MOH 01
200	2		RTNA	79DER 01
200	4		ICPES	83SCH 04
200	7		FAA	84ROS 01
201			ICPES	78DAH 01
201	1	7	RTNA	84FAR 02
201	4	13	HPLC	85BON 01
201.7	7.9		RTNA	77BUO 01
202	4	13	HPLC	85BON 01
204			ICPES	80HAA 01
204	9		CPXRF	78VIS 01
204	9		AA	84CUB 01
205		6	AA	72SIN 01
206	5		RTNA	74RAV 01
207		11	ASV	81DAN 01
208	11		AA	76LAN 01
208	27		RTNA	74SCH 03
210			ICPES	78CAP 01
210	12.5		FAA	75PIC 01
213		17	UU	74MAS 01
216		11	ASV	81DAN 01
216	22	32	CPXRF	77CRO 01
225	21		ICPES	82AZI 02
241	45		CPAA	78MCG 01
241	54	32	CPXRF	77CRO 01
241	65		CPXRF	76ZEI 01
270	90		14NAA	81WIL 02
277	14		AA	79MAT 02
394	3		AA	81UCH 01
Dy (ng/g)				
2.4	0.8		RTNA	76GAU 01
3.4	0.1		RTNA	86TSU 01
Er (ng/g)				
<	0.5	L	RTNA	82LAU 01
<	0.5	L	RTNA	76GAU 01
0.5			RTNA	77LAU 02
Eu (ng/g)				
0.235	0.024		RTNA	76GAU 01
0.3	0.04		RTNA	86TSU 01
0.35			RTNA	82LAU 01
0.35			RTNA	77LAU 02
0.4	0.1		RTNA	83TJI 01
3			ITNA	78CAP 01
140			ITNA	80CRE 01
310			ITNA	73NAD 01

Conc	Uncer	Com	Method	Reference
F (ng/g)				
40	20		ISE	83KNA 01
120			ISE	84GLA 02
Fe (ug/g)				
110	5		AA	75HIN 01
132		17	UU	74MAS 01
137	5		14NAA	81WIL 01
149		11	XRF	83PEL 01
150		11	XRF	83PEL 01
155	49	11	AA	78GOR 01
186	37		AA	79MAN 01
187	80	12	FAE	83MAR 04
205			CPXRF	78UEM 01
209	28	11	ICPES	82JON 01
220	16		RTNA	77MEL 01
226		17	UU	74MAS 01
229		17	UU	74MAS 01
230	37		FAA	77FUJ 01
234	6		FAA	84HAR 02
236	5		RTNA	75LIE 01
236	5		RTNA	77LIE 01
239			ICPES	84NAD 01
240		11	XRF	83PEL 01
240		17	UU	74MAS 01
240	7		EXRF	80DYC 01
240	12		RTNA	77TJI 01
241	8	1	ICPES	78SUD 01
242		17	UU	74MAS 01
243	14		FAA	81CLE 02
244	2		ICPES	79MCQ 02
244	6		ICPES	79MCQ 01
244	10		AA	79MCQ 01
247.3			AA	79LOC 01
248	16		CPXRF	80MAE 01
249			RTNA	75STE 02
250	12		CPXRF	78VIS 01
250	22		ITNA	77HAM 01
252			ITNA	79KUC 01
252	25		ICPES	81BLA 01
253			FAA	78CAP 01
254			ICPES	78CAP 01
254	7	2	FAA	84MIL 01
255	8		ITNA	79SAT 01
255	15		ITNA	79ZEI 01
255	30		ITNA	78FUR 01
256			OES	75BOL 02
256	3		AA	80IID 01
256	3	1	AA	77UCH 02
256	32		CPXRF	79MAN 01
257			ITNA	78CAP 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference
Fe (ug/g) cont.				
257		11	XRF	83PEL 01
257		14	FAA	80CHA 08
257	30	32	CPXRF	77CRO 01
258		7	RTNA	81KUC 01
258	10	11	ICPES	82JON 01
259	12	11	ICPES	81BLA 02
260			CPXRF	84KAU 01
260.9	12.89		NAA	76GUZ 01
261	8		ITNA	86GRE 01
261	15		ICPES	85FAS 01
262			ITNA	73NAD 01
262	7		ICPES	78JAC 01
262	7.7	6	DCPES	83FRA 01
262	10		FAA	81CLE 01
262	13		ICPES	79ABE 01
262	18		CPXRF	81SAI 01
263	12		ITNA	84ALK 01
263	12		CPXRF	81ROB 02
264	3	11	ICPES	82JON 01
264	4	2	FAA	84MIL 01
264	6	11	ICPES	82JON 01
264	29		ITNA	78BEH 01
264	44		ITNA	86CHI 01
265	5		GC	81BLA 01
265	11		RTNA	79WAR 02
265	16		ITNA	74WES 01
265	19		ITNA	81KRI 01
265	25		NAA	78GAN 01
265	30		ITNA	79CHA 02
266	5	11	ICPES	81BLA 02
266	9	D	ICPES	80SCH 08
266	9		ICPES	80SCH 05
266	10	11	AA	74WES 01
266	10	11	AA	78GOR 01
267		14	FAA	80CHA 08
267	5		EXRF	79GIA 01
268	8		FAA	80LON 01
268	24		EXRF	77NIE 01
268	25	1	ICPES	78SUD 01
268	38		VV	79LAK 01
269	9		CPXRF	85CLA 01
269	10		ICPES	81KNA 01
269	12		ITNA	80LAK 01
270			ICPES	78DAH 01
270		11	SSMS	85VOS 01
270	4.2	6	DCPES	83FRA 01
270	12		ITNA	73COR 01
270	12		COLOR	78GOR 01
270	18		CPXRF	84BIS 01
270	20	7	RTNA	80GAL 02
270	20		NAA	77GIL 01
270	47		ITNA	74DON 01
271	6		ITNA	80MIC 01
271	27		ITNA	81MOL 01
271.5	11.5	34	CPXRF	78JOL 01
272	3		AA	82TIN 01
272	9.5	11	AA	74WES 01
272	15	7	RTNA	81KUC 01
272	27		RTNA	76GAU 01
272	71		XRF	77SMI 04
273	5		ITNA	80MAE 01
273	8.5	6	CPXRF	77WIL 03
273	9		FAA	81CHA 01
273	10		AA	84CUB 01
274	5		AA	80UCH 01
274.5	28		PAA	76KAT 04
275	4	13	HPLC	85BON 01
275	6	13	HPLC	85BON 01
275	12		AA	83RAP 01
276			FAA	75SLA 01
276	2	1	AA	77UCH 02
277	2		ITNA	74LIN 01
277.9	16.7	6	ITNA	74BEC 01
278			AA	80EVA 01
278	14		CPAA	77ZIK 01
279	20		RTNA	77GIL 03
280			AA	82WIL 04
280		11	SSMS	85VOS 01
280	30		ITNA	77ZIK 01
281	2		ICPES	85WOL 01
282			ICPES	80HAA 01
282	26		ICPES	84ZER 01
283	60		CPAA	78MCG 01
283	68		CPXRF	76ZEI 01
285		17	UU	74MAS 01
287	17		CPXRF	77WIL 02
287	81		IENA	86CHI 01
289	52	32	CPXRF	77CRO 01
290			ITNA	80CRE 01
293		17	UU	74MAS 01
293	8		RTNA	80SLO 01
293	8		ITNA	79DAS 01
293	21	6	CPXRF	77WIL 03
300	31	12	FAA	85CAR 02
305	33		ICPES	84BLA 01
310	28		RTNA	74SCH 03
310	33	12	FAA	85CAR 02
315			ITNA	77OSB 01
331		17	UU	74MAS 01
334	10		14NAA	81WIL 02
343	19		AA	82HAR 01
345	7	12	FAE	83MAR 04

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference
Fe (ug/g) cont.				
350	64		RTNA	77KUS 01
364		17	UU	74MAS 01
1395			AE+AF	79ULL 01
1433		17	UU	74MAS 01
Ga (ng/g)				
< 240		L	IENA	78WAN 01
< 500		L	EXRF	79GIA 01
< 20000		L	14NAA	81WIL 02
4			RTNA	74HEN 01
1100	700		CPXRF	77WIL 02
Gd (ng/g)				
< 1.4		L	RTNA	76GAU 01
1.8			RTNA	82LAU 01
2.4			RTNA	77LAU 02
Ge (ng/g)				
< 400		L	EXRF	79GIA 01
H (%)				
6.8	0.3		TCGS	79FAI 01
7	0.1	35	TCGS	79GLA 04
7.12	0.1		CB	80SCH 02
Hf (ng/g)				
1			RTNA	80SLO 01
7.3			ITNA	80CRE 01
Hg (ng/g)				
13.7	1.4	14	FAA	74CHU 01
14	2		FAA	79STO 01
14	2		CVAA	78MAT 01
14.5	1.7		RTNA	72RAI 01
14.5	3.4		RTNA	72ROO 01
14.5	3.4		RTNA	72ROO 02
14.7			RTNA	75STE 02
15	2		MPOES	81TAN 01
15	4		RTNA	74SCH 03
15.8	5.1	14	FAA	74CHU 03
16		7	RTNA	81KUC 01
16			CVAA	79TAG 01
16			CVAA	82GLA 02
16	0.3		RTNA	83GRE 02
16	1		RTNA	74BYR 03

Conc	Uncer	Com	Method	Reference
Hg (ng/g) cont.				
16	1.2		FAA	72ROO 01
16	1.6		RTNA	79MAY 01
16	2		FAA	77GLA 03
16	2		RTNA	77TJI 01
16	2		AA	79FLA 02
16	3		CVAA	80TON 01
16	3	7	RTNA	81KUC 01
16	5		CVAA	80KOR 01
16.1	0.4		ITNA	86GRE 01
16.2	0.08		RTNA	84DRA 01
16.2	3	14	FAA	74CHU 03
16.4	0.4		RTNA	74HEN 01
16.4	4.3		NAA	76GUZ 01
16.5	0.8		CVAA	72RAI 01
16.8	1.8	5	RTNA	80GRE 01
17	2		RTNA	74ORV 01
17	2		RTNA	79WAR 02
17	2		CVAA	82SUL 01
17	4	2	CVAA	79KNE 01
17.3	2.8	5	RTNA	80GRE 01
17.4	2		RTNA	82GRI 01
18	2		RTNA	79CHA 02
18	3		RTNA	75LIT 01
18	40	R*	AA	83YAN 01
20			UU	74FEL 01
20		17	UU	74MAS 01
20	2		CVAA	77AND 01
20	5		CVAA	84BAR 02
22	1		RTNA	75LIE 01
22.1	6.3	14	FAA	74CHU 03
22.3	1.3		RTNA	77LIE 01
30	10		FAA	78EGA 01
41		17	UU	74MAS 01
47	4		RTNA	77MEL 01
200	21		ITNA	75LIT 01
Ho (ng/g)				
< 0.94		L	RTNA	76GAU 01
0.2			RTNA	82LAU 01
0.25			RTNA	77LAU 02
0.3	0.1		RTNA	86TSU 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference
I (ng/g)				
180	12		RTNA	77ROO 01
190			ITNA	84GLA 11
200	10		RTNA	79WAR 02
210	60		IENA	84FAR 01
220	30		ITNA	79CHA 02
221.8	14.8		RTNA	80GVA 01
230	40		IENA	84GLA 11
237			IENA	85GAU 04
246	11	35	RTNA	81ALL 01
249	12	34	RTNA	81ALL 01
249	12		RTNA	81STR 01
251	16		RTNA	83ALL 01
270	30		IENA	82SAT 01
280			NAA	79HEC 01
280	10		MS	85SCH 01
In (ng/g)				
<	1000	L	RTNA	76GAU 01
0.05			RTNA	74RAV 01
0.09	0.01		RTNA	78KOB 01
K (%)				
0.5	0.07		CPXRF	80MAE 01
0.63	0.11		14NAA	81WIL 01
0.6674	0.0662		RTNA	74SCH 03
0.7			CPXRF	78UEM 01
0.7		11	SSMS	85VOS 01
0.725	0.789	RD	ITNA	79IMA 03
0.725	0.7898	R	ITNA	79IMA 01
0.742			ITNA	78CAP 01
0.7537		17	UU	74MAS 01
0.76		11	SSMS	85VOS 01
0.821		17	UU	74MAS 01
0.84	0.13	32	CPXRF	77CRO 01
0.85	0.02		CPXRF	85CLA 01
0.87	0.13		ITNA	84GLA 02
0.875			ITNA	80CRE 01
0.904		17	UU	74MAS 01
0.91			ICPES	84NAD 01
0.91	0.08		RTNA	79WAR 02
0.92		1	IENA	79KUC 01
0.92	0.01	2	FAA	84MIL 01
0.92	0.028		CPXRF	81ROB 02
0.93	0.05		CPXRF	77WIL 02
0.93	0.11		EXRF	77NIE 01
0.935			ITNA	82AKA 01
0.94	0.05		ITNA	80MAE 01
0.948		17	UU	74MAS 01
0.948		17	UU	74MAS 01

Conc	Uncer	Com	Method	Reference
K (%) cont.				
0.95	0.05		CPXRF	80KIR 01
0.96			ITNA	79KUC 01
0.96			ITNA	73NAD 01
0.96	0.06		AA	74WES 01
0.961			CPXRF	84KAU 01
0.964			CPXRF	76ZEI 01
0.964	0.0244		ITNA	84ALK 01
0.9645	0.0045		CPAA	78MCG 01
0.969	0.022		FE	80UCH 01
0.969	0.09		ITNA	79CHA 02
0.969	0.091		PAA	76KAT 04
0.9695	0.0785		ITNA	74DON 01
0.97	0.05	11	ICPES	82JON 01
0.979	0.024	12	FAA	85CAR 02
0.979	0.028		WXRF	84ALK 01
0.98		17	UU	74MAS 01
0.98	0.008		FAA	84HAR 02
0.98	0.026		ITNA	86GRE 01
0.98	0.1		ITNA	82EHM 01
0.9875		17	UU	74MAS 01
0.99	0.02		ITNA	80MIC 01
0.99	0.02	11	ICPES	82JON 01
0.99	0.03		CPXRF	84BIS 01
0.992	0.022		AA	75HIN 01
0.9984	0.0648		NAA	76GUZ 01
1.00			ITNA	77OSB 01
1.00	0.01	2	FAA	84MIL 01
1.00	0.03		TCGS	79FAI 01
1.006		1	AA	78SZY 01
1.01	0.18		ITNA	77HAM 01
1.015		1	AA	78SZY 01
1.02	0.01		RTNA	80WOI 01
1.02	0.012		ITNA	78FUR 01
1.02	0.03		AA	82HAR 01
1.021	0.048	34	CPXRF	78JOL 01
1.0323	0.0258		RTNA	77LIE 01
1.0323	0.0258		RTNA	75LIE 01
1.04	0.03		ITNA	74WES 01
1.05	0.01		ICPES	85WOL 01
1.05	0.02		ICPES	85WHI 02
1.06		35	ITNA	81GLA 04
1.06	0.08		NAA	78GAN 01
1.087	0.124		CPXRF	79MAN 01
1.12	0.02		ITNA	80SLO 01
1.13	0.04		EXRF	80DYC 01
1.15	0.06		ICPES	84BLA 01
1.18	0.1		14NAA	81WIL 02
1.2	0.22		FAE	83MAR 04

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference
La (ng/g)				
10	1		RTNA	74HEN 01
12	9		RTNA	74SCH 03
14	5		RTNA	80SLO 01
17			RTNA	75LIE 01
17			RTNA	82LAU 01
17			RTNA	77LAU 02
17	2		RTNA	83TJI 01
17.3	0.4		RTNA	77LIE 01
20			ITNA	73NAD 01
24.5	1.2		RTNA	76GAU 01
31	1		RTNA	86TSU 01
62	5		ITNA	79CHA 02
70			ITNA	78CAP 01
72			ITNA	80CRE 01
Li (ng/g)				
164	26		AA	85EVA 01
Lu (ng/g)				
<	0.02		RTNA	83TJI 01
<	0.1	L	RTNA	76GAU 01
0.039			RTNA	77LAU 02
0.039			RTNA	82LAU 01
Mg (ug/g)				
290	40		14NAA	81WIL 01
332	541	R	ITNA	79IMA 01
332	541	RD	ITNA	79IMA 03
450		11	SSMS	85VOS 01
516		17	UU	74MAS 01
517		17	UU	74MAS 01
555	12	2	FAA	84MIL 01
555	21	1	ICPES	78SUD 01
558	11		ITNA	84ALK 01
566			FAA	78CAP 01
566	10		AA	79MCQ 01
567			AA	79LOC 01
573	4		ICPES	79MCQ 02
573	17		ICPES	79MCQ 01
580	20		CPXRF	80KIR 01
588			ICPES	84NAD 01
590	40		ICPES	79ABE 01
593	10		AA	80IID 01
593	10	1	AA	77UCH 02
593	49		AA	82HAR 01
594	13	2	FAA	84MIL 01
595	6	6	AA	76HOW 01
596.5	13.5		PAA	76KAT 04

Conc	Uncer	Com	Method	Reference
Mg (ug/g) cont.				
597	10		AA	75HIN 01
598	14		ITNA	75PIE 01
598	50		ITNA	77ZIK 01
600	9	1	AA	77UCH 02
601	5		ICPES	85WOL 01
601	6	6	AA	76HOW 01
602	11		AA	80UCH 01
604.6	26.84		NAA	76GUZ 01
605	32		AA	74WES 01
608	6		RTNA	79WAR 02
608	6		ITNA	79WAR 01
609			AE+AF	79ULL 01
610	15		FAA	79WAR 01
613			ICPES	78CAP 01
616	19		ICPES	85WHI 02
618	10		RTNA	80WOI 01
620	20		ITNA	79CHA 02
629	6.7	6	DCPES	83FRA 01
629	12.3	6	DCPES	83FRA 01
636			ICPES	78DAH 01
638	34		WXRF	84ALK 01
650	60		ITNA	86GRE 01
657	9	11	ICPES	82JON 01
658	48		ICPES	84BLA 01
659	82		ITNA	74WES 01
660	20	11	ICPES	82JON 01
668	42		AA	79LAK 01
674		17	UU	74MAS 01
684	110		ITNA	78FUR 01
700	20		14NAA	81WIL 02
700	130		ITNA	77HAM 01
712	98	1	ICPES	78SUD 01
720			ITNA	84GLA 11
949			ITNA	78CAP 01
1040			ITNA	73NAD 01
Mn (ug/g)				
5.3	0.72	6	ITNA	74HOF 01
7.7			FAA	83ATS 01
8	1		CPXRF	80MAE 01
8.4	2.1		CPXRF	80KIR 01
8.5	2.6		ICPES	82AZI 02
8.73			FAA	77SHE 02
9.00	0.37		FAA	74GRO 01
9.0	0.7		VV	80SCH 05
9.0	0.7	D	ICPES	80SCH 08
9.0	2.2	6	CPXRF	77WIL 03
9.12		17	UU	74MAS 01
9.14			ITNA	73NAD 01
9.2		11	SSMS	85VOS 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference
Mn (ug/g) cont.				
9.2	0.7		AA	79FLA 02
9.2	0.9	11	ICPES	81BLA 02
9.2	1.1	12	FAA	85CAR 02
9.2	1.8	6	CPXRF	77WIL 03
9.26	0.85		RTNA	79PLA 01
9.3			ITNA	82AKA 01
9.3	0.5		CPXRF	84BIS 01
9.4	0.1	7	RTNA	84FAR 02
9.4	0.3		RTNA	83DAN 01
9.4	1.1		EXRF	79GIA 01
9.42		17	UU	74MAS 01
9.44	1.16		FAA	84HAR 02
9.5		17	UU	74MAS 01
9.5	0.5		ITNA	82KIM 01
9.5	0.7	11	ICPES	81BLA 02
9.5	1.4		CPXRF	77WIL 02
9.6	0.4		RTNA	74HEN 01
9.6	0.5		RTNA	77KUS 01
9.6	0.6	11	FAA	74WES 01
9.7			ICPES	78CAP 01
9.7		11	SSMS	85VOS 01
9.7	0.3		CPXRF	85CLA 01
9.7	0.3	1	ICPES	78SUD 01
9.7	0.8	11	ICPES	82JON 01
9.71	1.36		ICPES	82AZI 01
9.77	0.79		ITNA	74DON 01
9.8	1.1		FAA	82GRO 01
9.9			ICPES	78DAH 01
9.9		17	UU	74MAS 01
9.9	0.3		COLOR	84HIR 02
9.9	0.47		ITNA	74WES 01
9.9	0.9		ICPES	85WHI 02
9.95	0.22		ITNA	86GRE 01
10		35	ITNA	81GLA 04
10			FAA	75SLA 01
10		11	AA	81MOH 01
10.0	0.5		NAA	78GAN 01
10.0	0.6	6	ITNA	74HOF 01
10.0	0.7		ITNA	79WAR 01
10.0	0.7		RTNA	79WAR 02
10	1		ICPES	79MCQ 01
10	1		ICPES	79MCQ 02
10.0	1.3		ICPES	79ABE 01
10	2		EXRF	80DYC 01
10	5		AA	76LAN 01
10.1			CPXRF	84KAU 01
10.1			ITNA	84GLA 11
10.1	0.1		AA	82CLE 01
10.1	0.2		ITNA	80SLO 01
10.1	0.5	11	RTNA	74WES 01
10.1	0.6	2	FAA	84MIL 01
10.1	1.1		ITNA	79SAT 01
10.1	1.2		CPXRF	81ROB 02
10.1	3.6		EXRF	77NIE 01
10.15	2.15		PAA	76KAT 04
10.17	0.69		NAA	76GUZ 01
10.2		17	UU	74MAS 01
10.2		17	UU	74MAS 01
10.2			ASV	80CHR 01
10.2	0.1		AA	80IID 01
10.2	0.2		AA	75HIN 01
10.2	0.4		ICPES	82EVA 01
10.2	0.45	11	RTNA	74WES 01
10.2	1	1	AA	77UCH 02
10.23	0.43		RTNA	74RAV 01
10.3	0.2		ITNA	82EHM 01
10.3	0.2		ICPES	85WOL 01
10.3	0.2		AA	85KOJ 01
10.3	0.3		FAA	82CLE 01
10.3	0.3		FAA	81CLE 02
10.3	0.36	11	FAA	74WES 01
10.3	0.77		ITNA	77HAM 01
10.3	0.8		RTNA	76GAU 01
10.3	1		FAA	80LON 01
10.4			FAA	78CAP 01
10.4			AA	82CLE 01
10.4	0.2		FAA	82CLE 01
10.4	0.23		FAA	75PIC 01
10.4	0.3	1	AA	77UCH 02
10.4	0.4		RTNA	77BUO 01
10.4	0.4	11	ICPES	82JON 01
10.4	0.6	11	FAA	75SME 01
10.4	1.1		RTNA	74SCH 03
10.5		11	XRF	83PEL 01
10.5	0.1	7	RTNA	84FAR 02
10.5	0.1	7	RTNA	84FAR 02
10.5	0.2		RTNA	80WOI 01
10.5	0.3	11	ICPES	82JON 01
10.5	0.6		AA	83RAP 01
10.5	0.6		ITNA	84GLA 02
10.5	1.1		ITNA	79CHA 02
10.5	16	6	FAA	76LAN 01
10.6	0.11	6	DCPES	83FRA 01
10.6	0.19	D	AA	84HUD 03
10.6	0.19		AA	84HUD 01
10.6	0.2		ICPES	83SCH 04
10.6	0.7		FAA	81CLE 01
10.6	1.1		ITNA	78FUR 01
10.7	0.3		ITNA	80MAE 01
10.8	0.15	6	DCPES	83FRA 01
10.8	0.2	2	FAA	84MIL 01
10.8	0.3		RTNA	82KIM 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference
Mn (ug/g) cont.				
10.8	0.8		FAA	79WAR 01
10.8	20	6	FAA	76LAN 01
10.9	1.2		CPXRF	79MAN 01
10.9	1.5	34	CPXRF	78JOL 01
10.9	2		XRF	77SMI 04
11			AA	80EVA 01
11		17	UU	74MAS 01
11		11	AA	81MOH 01
11			ICPES	84NAD 01
11.0	0.4		FAA	81CHA 01
11.0	0.4		AA	82EVA 01
11.0	0.7		ICPES	84ZER 01
11.1	1.6		AA	82HAR 01
11.1	2.1		ICPES	85FAS 01
11.2	0.5		RTNA	77LIE 01
11.2	0.5		RTNA	75LIE 01
11.2	0.7		FAA	84ROS 01
11.2	1.4	1	ICPES	78SUD 01
11.4	0.8	11	FAA	75SME 01
11.4	3.7	12	FAA	85CAR 02
11.5		17	UU	74MAS 01
11.5			ITNA	78CAP 01
11.5	13.7	RD	ITNA	79IMA 03
11.5	13.7	R	ITNA	79IMA 01
11.7	0.7		FAA	79WES 01
12	2.6		ITNA	84ALK 01
12.5	2		DCPES	79REE 01
12.5	2	D	DCPES	81REE 01
13			AE+AF	79ULL 01
13	3		ITNA	77ZIK 01
13	6		TCGS	79FAI 01
14	1		AA	79MCQ 01
14.2	1.8		FAA	77FUJ 01
19			XRF	80SUZ 02
19	9		CPXRF	78VIS 01
Mo (ug/g)				
1.81	0.07		FAA	84GOH 01
2			ICPES	79MCQ 02
2	1		CPAA	77ZIK 01
2.2	0.9		CPXRF	80KIR 01
2.3		11	SSMS	85VOS 01
2.5		17	UU	74MAS 01
2.5	0.1		ITNA	78FUR 01
2.6	0.4		14NAA	81WIL 01
2.8		17	UU	74MAS 01
2.8			ICPES	84MIA 01
2.89	0.45		IENA	86CHI 01
2.91	0.14		ITNA	80MIC 01
2.95	0.27		RTNA	76GAU 01

Conc	Uncer	Com	Method	Reference
Mo (ug/g) cont.				
2.97		17	UU	74MAS 01
3			ITNA	73NAD 01
3.0	0.2		RTNA	83DAN 01
3.0	0.3		RTNA	77GIL 03
3.0	0.3		NAA	77GIL 01
3.0	0.3	7	RTNA	80GAL 02
3.04	0.18		IENA	75MAZ 01
3.06	0.7	34	CPXRF	78JOL 01
3.1			FAA	79BEN 01
3.1		1	IENA	79KUC 01
3.1	0.03		RTNA	80KUL 01
3.1	0.5	11	ICPES	82JON 01
3.12	0.26		RTNA	78NAD 01
3.19	0.14		RTNA	77LIE 01
3.19	0.14		RTNA	75LIE 01
3.2			ITNA	79KUC 01
3.2	0.1		RTNA	77DIK 01
3.2	0.11		ITNA	86GRE 01
3.23	0.09		SSMS	77PAU 01
3.3	0.2		RTNA	79WAR 02
3.3	0.3	11	RTNA	74WES 01
3.31	0.09		COLOR	85EVA 02
3.33			RTNA	75STE 02
3.39	0.24		POL	84NAG 01
3.4		1	IENA	79KUC 01
3.4	0.1	11	ICPES	82JON 01
3.4	0.15		FAA	74WES 01
3.4	0.2		RTNA	80SLO 01
3.4	0.2	7	RTNA	81KUC 01
3.4	0.36		RTNA	82BYR 01
3.4	0.7	5	ITNA	80TOU 01
3.42	0.11		RTNA	80VER 01
3.42	0.11	11	RTNA	81COR 01
3.42	0.2		COLOR	83MAT 02
3.5			RTNA	84BYR 01
3.5	0.2	11	RTNA	74WES 01
3.5	0.6		CPXRF	77RIN 01
3.5	1.5		CPXRF	77WIL 02
3.6			RTNA	85TIA 01
3.6	0.14	11	RTNA	81COR 01
3.6	0.7		RTNA	74SCH 03
3.6	0.9		CPXRF	80MAE 01
3.7	0.4		14NAA	81WIL 02
3.71	0.25		RTNA	77TJI 01
3.78	0.356		NAA	76GUZ 01
3.8			ICPES	80HAA 01
3.8		7	RTNA	81KUC 01
3.9	0.42		RTNA	84MOK 02
4.1	0.4		CPXRF	78VIS 01
4.3	1.2		ITNA	79ZEI 01
4.9		17	UU	74MAS 01
5.8	0.3		AA	79FLA 02

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference
N (%)				
10.35	0.3		TCGS	79FAI 01
10.4	0.8	35	TCGS	79GLA 04
10.42	0.11		CB	80SCH 02
10.59	0.04		GRAV	74CAR 01
10.59	0.04	D	GRAV	74CAR 05
10.81	0.24	D	NT	74CAR 05
10.82	0.24		NT	74CAR 01
Na (ug/g)				
1019		17	UU	74MAS 01
1152	119	6	ITNA	74HOF 01
1600	100		14NAA	81WIL 01
1940	30		ITNA	80SLO 01
1980	60		ITNA	78FUR 01
2000	150		14NAA	81WIL 02
2000	500		CPXRF	80KIR 01
2040			ITNA	80CRE 01
2176	77	6	ITNA	74HOF 01
2220		17	UU	74MAS 01
2227	200		ITNA	77ZIK 01
2230	210		ITNA	77HAM 01
2250		17	UU	74MAS 01
2250			ITNA	84GLA 02
2260	370		ITNA	77JUR 02
2280		1	IENA	79KUC 01
2280	300		ITNA	82SCH 05
2300			ICPES	84NAD 01
2300	2850	RD	ITNA	79IMA 03
2300	2850	R	ITNA	79IMA 01
2310			ITNA	79KUC 01
2320	40		AA	75HIN 01
2320	300		ICPES	79ABE 01
2330	60		ITNA	74WES 01
2340		17	UU	74MAS 01
2340	250		AA	82HAR 01
2346	300	12	FAA	85CAR 02
2355			ITNA	82AKA 01
2360	30		ITNA	86GRE 01
2370		17	UU	74MAS 01
2370	40		PAA	76KAT 04
2390	20		ICPES	85WOL 01
2400		35	ITNA	81GLA 03
2400			ITNA	73NAD 01
2400	200		AA	74WES 01
2400	350		FAE	83MAR 04
2410	10		RTNA	74HEN 01
2420	50		FE	80UCH 01
2425		17	UU	74MAS 01
2426	130		ITNA	74DON 01
2430	150		ITNA	79CHA 02
Na (ug/g) cont.				
2438			ITNA	78CAP 01
2440	160		RTNA	79WAR 02
2454	135		ITNA	84ALK 01
2455		1	AA	78SZY 01
2462	502	12	FAA	85CAR 02
2490	260	2	FAA	84MIL 01
2500			ITNA	80MIC 01
2530	120		NAA	78GAN 01
2540		1	AA	78SZY 01
2550		35	ITNA	81GLA 04
2550	190		ITNA	78BEH 01
2570		1	IENA	79KUC 01
2570		17	UU	74MAS 01
2570	870	2	FAA	84MIL 01
2609	142		NAA	76GUZ 01
2632	29		RTNA	75LIE 01
2632	29		RTNA	77LIE 01
2720	190		ICPES	85WHI 02
2730			ITNA	84GLA 11
2768	156		RTNA	74SCH 03
3010	230		ICPES	84BLA 01
3100			ITNA	77OSB 01
3100	600		TCGS	79FAI 01
Nd (ng/g)				
9			RTNA	82LAU 01
14.5			RTNA	77LAU 02
18	4		RTNA	83TJI 01
170	40		RTNA	76GAU 01
Ni (ng/g)				
< 60		L	ICPES	82JON 01
< 60			AA	82EVA 01
< 60		L	ICPES	82JON 01
< 120			ITNA	80MIC 01
< 500			ITNA	75PIE 01
< 500			ICPES	79ABE 01
< 500		L	NAA	76GUZ 01
< 500		L	EXRF	77NIE 01
< 590			CPXRF	84KAU 01
< 700		L	RTNA	76GAU 01
< 720		L	RTNA	81KUC 01
< 800		L	EXRF	79GIA 01
< 1000			RTNA	77MEL 01
< 9000		L	14NAA	81WIL 01
50			AA	78EVA 01
50	50		ICPES	82EVA 01
62	18		IENA	75MAZ 01
70	30		AA	79FLA 02

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference
Ni (ng/g) cont.				
155	19		FAA	80DOR 01
180	20		PAA	79CHA 02
195			GC	85MEY 02
200	10		ASV	85ADE 01
200	30		RTNA	79WAR 02
210			ITNA	73NAD 01
227			VOLT	81PIH 01
270	120		RTNA	77TJI 01
470		7	RTNA	81KUC 01
520	150		IENA	86CHI 01
600	400		CPXRF	78VIS 01
700	500		CPXRF	77WIL 02
1000	500		RTNA	80SLO 01
1000	690		AA	79MON 01
1200	100		EXRF	80DYC 01
1300	200		CPXRF	79REN 02
P (%)				
0.31	0.1		CPXRF	79REN 02
0.64	0.06		14NAA	81WIL 01
0.816	0.64		EXRF	77NIE 01
0.905			NAA	78GAN 01
0.93			ICPES	84NAD 01
0.98			ICPES	78CAP 01
0.9891	0.0465	1	ICPES	78SUD 01
1.0009	0.026	1	ICPES	78SUD 01
1.04	0.06	6	FAA	81LAN 01
1.1	0.006		COLOR	79MCQ 01
1.1	0.02	6	FAA	81LAN 01
1.1	0.15		14NAA	81WIL 02
1.13	0.03		ICPES	79MCQ 01
1.14			CPXRF	84KAU 01
1.152	0.004		ICPES	84PRI 01
1.16	0.01		ICPES	85WOL 01
1.16	0.03		ICPES	79ABE 01
1.18	0.03	11	ICPES	82JON 01
1.18	0.05		ICPES	84BLA 01
1.2056	0.065		WXRF	84ALK 01
1.21	0.01	11	ICPES	82JON 01
1.235	0.241		IENA	84ALK 01
1.24	0.02		ICPES	85WHI 02
1.3	0.1		CPXRF	80KIR 01
1.3498	0.029		NAA	76GUZ 01

Conc	Uncer	Com	Method	Reference
Pb (ng/g)				
200		11	SSMS	85VOS 01
240	80		FAA	77FUJ 01
250			AA	78EVA 01
250	40		AA	82EVA 01
262		17	UU	74MAS 01
270	20	11	ASV	84ADE 03
280	40		AA	80AGE 01
290	20	11	ASV	84ADE 03
300			FAA	79YAS 01
300	20	11	ASV	84ADE 03
300	40		FAA	78GRO 01
300	100		CPXRF	78VIS 01
300	300	11	ICPES	82JON 01
310	20		VOLT	84OST 01
320		14	FAA	80CHA 08
320	13		FAA	75PIC 01
320	30	11	ASV	84ADE 03
320	60		FAA	79WAR 01
328	16	11	IDMS	74CHO 02
330			AA	77FRI 01
330	9		FAA	83STE 05
330	10		FAA	80POL 01
330	10		FAA	79DAB 02
330	20		AA	83RAP 01
330	700		AA	76LAN 01
333	67	11	IDMS	74CHO 02
340		11	FAA	81DAN 01
340	20		AA	79FLA 02
340	20		AA	85ADE 02
340	20	11	ASV	84ADE 03
340	40		FAA	76HAD 01
343	23		FAA	76KOI 01
343	23		AA	76ZAN 02
350			AA	84KAN 01
350	15		FAA	81CHA 01
350	20		FAA	82ATS 02
350	22	6	FAA	76LAN 01
350	40		AA	79WAR 01
350	50		FAA	75BEH 01
350	50	D	FAA	80SCH 08
350	50		FAA	81KNA 01
350	50		AA	80SCH 05
360		11	FAA	81DAN 01
360	12	6	FAA	76LAN 01
360	25	6	POL	72SIN 01
360	30		FAA	79STO 01
360	30		SSMS	77PAU 01
370			AA	82WIL 04
370			ASV	82GAJ 01
380			FAA	83ATS 01
380			ICPES	80HAA 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference
Pb (ng/g) cont.				
380			FAA	82HOE 01
380		14	FAA	80CHA 08
380			FAA	82VAN 01
380			ASV	74COP 01
380	76		ASV	79STO 01
390		6	POL	72SIN 01
390		11	ASV	81DAN 01
390		11	ASV	81DAN 01
390	40		FAA	84ROS 01
400	30	6	DCPES	83FRA 01
400	50		PAA	79CHA 02
400	100		PAA	74LUT 01
400	300	11	ICPES	82JON 01
420	140	34	CPXRF	78JOL 01
430	130		ICPES	82EVA 01
450	30		FAA	80LEG 01
460	130		FAA	74GRO 01
480	50	6	DCPES	83FRA 01
490		6	FAA	82KOI 01
490		6	FAA	81HIN 01
500			OES	75BOL 02
500		6	FAA	82KOI 01
500		6	FAA	81HIN 01
520		17	UU	74MAS 01
530			ICPES	85NAR 02
3900	1000		CPXRF	77WIL 02
5000			14NAA	81WIL 01
43000	4000		FAA	79WES 01
Pr (ng/g)				
<	3	L	RTNA	82LAU 01
4			RTNA	77LAU 02
4	2		RTNA	86TSU 01
4.6	0.3		RTNA	76GAU 01
Pt (pg/g)				
<	3000		RTNA	84TJI 01
70	33		RTNA	82ZEI 01
Rb (ug/g)				
9.9	1.6		CPXRF	80MAE 01
13.2		11	SSMS	85VOS 01
15	2		14NAA	81WIL 02
15	2.5	34	CPXRF	78JOL 01
15.1	4.4		XRF	77SMI 04
16.5	1.2	5	ITNA	80TOU 01
16.6	2.8		RTNA	74SCH 03
16.7			CPXRF	84KAU 01

Conc	Uncer	Com	Method	Reference
Rb (ug/g) cont.				
16.7	3.2		CPXRF	81ROB 02
16.8		1	IENA	79KUC 01
16.8	1.9	6	CPXRF	77WIL 03
16.9			ITNA	79KUC 01
17	0.7		ITNA	80MIC 01
17	1		EXRF	80DYC 01
17	3		ITNA	77ZIK 01
17.4	1.8		NAA	78GAN 01
17.72	1.8		ITNA	81MOL 01
17.8			ITNA	78CAP 01
17.97	0.42		ITNA	86CHI 01
17.97	0.6		RTNA	75LIE 01
17.97	0.6		RTNA	77LIE 01
18			ITNA	77OSB 01
18	0.3		RTNA	79WAR 02
18	0.8		ITNA	79SAT 01
18	1		CPXRF	77WIL 02
18.1	0.6		14NAA	81WIL 01
18.4	0.4		EXRF	79GIA 01
18.4	0.7		ITNA	86GRE 01
18.4	2		ITNA	81KRI 01
18.5	0.4		ITNA	74LIN 01
18.62	0.95		NAA	76GUZ 01
18.64	0.58		IENA	86CHI 01
18.7		17	UU	74MAS 01
18.7	0.2		ITNA	80LAK 01
18.7	0.5		ITNA	78FUR 01
18.7	0.9	5	ITNA	80TOU 01
18.7	1		ITNA	73COR 01
18.7	1.5		ITNA	79CHA 02
18.7	3.6		EXRF	77NIE 01
18.8	0.85		ITNA	84ALK 01
18.8	1.3		RTNA	76GAU 01
18.8	1.4		ITNA	79LAK 01
18.8	1.9		CPXRF	84BIS 01
18.9	0.8		FAA	83GRO 02
18.95	1.65		PAA	76KAT 04
19			ITNA	80CRE 01
19	1		RTNA	77MEL 01
19	1.6		ITNA	78BEH 01
19	1.6		ITNA	77JUR 02
19	2.5		ITNA	77HAM 01
19.1	0.8		CPXRF	85CLA 01
19.2	1.4		ITNA	80MAE 01
19.3	2.8		CPXRF	79MAN 01
19.5	2.1		ITNA	79ZEI 01
19.8	1.4	6	ITNA	74BEC 01
19.9		17	UU	74MAS 01
20		11	SSMS	85VOS 01
20	2.4		CPXRF	80KIR 01
20	3		CPXRF	78VIS 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference
Rb (ug/g) cont.				
20.1			ITNA	73NAD 01
20.9	2.5	6	CPXRF	77WIL 03
21.2	0.55		AA	85EVA 01
23.3		17	UU	74MAS 01
23.4		17	UU	74MAS 01
28			CPXRF	76ZEI 01
28		17	UU	74MAS 01
29	4		CPAA	78MCG 01
S (ug/g)				
3300	1000		CPXRF	79REN 02
6300	2100		NM	83LI 01
7200	200		TCGS	79FAI 01
7200	400		TCGS	77JUR 01
7353	81		ICPES	84PRI 01
7410	110		ICPES	84MOR 01
7440			CPXRF	84KAU 01
8150	80		CB	86BOW 01
8550	150		WXRF	86BOW 01
8800	273		WXRF	84ALK 01
9300	100		ICPES	85WHI 02
9500	700		CPXRF	80KIR 01
16200	2000		ITNA	79CHA 02
Sb (ng/g)				
4			RTNA	79MAY 01
4			RTNA	75LIE 01
4	1		RTNA	80SLO 01
4.8	0.5		RTNA	77LIE 01
4.8	1.2		RTNA	79ROS 02
5			HAA	79EVA 01
5	2		RTNA	79HOE 01
5.7	0.5		ITNA	86GRE 01
7	5		ITNA	78BEH 01
9	3		RTNA	74HEN 01
10	2		RTNA	78GAL 01
10	3		ITNA	80MIC 01
11	9		RTNA	74SCH 03
12			ITNA	80CRE 01
12	2	7	RTNA	80GAL 02
14	5		NAA	78GAN 01
14	10		ITNA	77ZIK 01
15	4		RTNA	77TJI 01
16	2		ITNA	79CHA 02
16	7		ITNA	73COR 01
18		17	UU	74MAS 01
22.9		17	UU	74MAS 01
26	1		RTNA	79WAR 02
34			ITNA	73NAD 01
Sb (ng/g) cont.				
50			ITNA	79KUC 01
55	9	6	ITNA	74BEC 01
69	24	6	ITNA	74BEC 01
70		1	IENA	79KUC 01
130	170	RD	ITNA	79IMA 03
130	170	R	ITNA	79IMA 01
300	200		ICPES	83OLI 01
Sc (ng/g)				
<	0.5	L	RTNA	75LIE 01
<	0.5	L	RTNA	77LIE 01
<	1	L	RTNA	80SLO 01
<	1		RTNA	75STE 02
<	1	L	NAA	78GAN 01
<	4	L	ITNA	78CAP 01
<	800	L	14NAA	81WIL 02
0.4		17	UU	74MAS 01
0.6	0.1		RTNA	74HEN 01
1			ITNA	73NAD 01
1	0.9		RTNA	76GAU 01
1.1			ITNA	84GLA 11
1.1	0.1		RTNA	79WAR 02
1.1	0.3		ITNA	78BEH 01
1.2	0.2		ITNA	80MIC 01
20	6		RTNA	77MEL 01
Se (ug/g)				
0.228	0.011		FLUOR	74IHN 02
0.4	0.27		FAA	81MEY 01
0.69	0.06		NAA	78GAN 01
0.75			FAA	74IHN 01
0.76		7	ICPES	84MIA 01
0.774			HAA	77IHN 01
0.8			CPXRF	84KAU 01
0.9		11	FAA	82VER 03
0.91			FLUOR	78EGA 01
0.92	0.04		HAA	82SUB 01
0.92	0.18	6	ITNA	74BEC 01
0.95	0.03		HAA	78EGA 01
0.97	0.03		ICPES	80HAA 01
0.972			FLUOR	79TAM 01
0.98	0.01		HAA	76FIO 01
0.98	0.03		DCPES	81CAR 02
0.98	0.03		GCMES	74TAL 02
0.98	0.05		ITNA	76DIK 01
0.98	0.06		AA	79PAV 02
0.98	0.15	34	CPXRF	78JOL 01
1.00			HAA	78WEL 01
1.00		11	FAA	82VER 03

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Se (ug/g) cont.

Conc	Uncer	Com	Method	Reference
1.00		17	UU	74MAS 01
1.00	0.01		ITNA	79SAT 01
1.00	0.02		FAA	76IHN 02
1.00	0.04		FAA	76IHN 01
1.00	0.1		RTNA	75ABU 01
1.00	0.1	11	AA	85BYE 01
1.00	0.1	11	HAA	82JON 01
1.00	0.1		ICPES	83OLI 01
1.00	0.2		CPXRF	80MAE 01
1.00	0.4		CPXRF	78VIS 01
1.01	0.04		ITNA	79CHA 04
1.01	0.06		ITNA	84ALK 01
1.02		11	HAA	85PIW 01
1.02			ITNA	81HAN 01
1.02		7	ICPES	84MIA 01
1.02		17	UU	74MAS 01
1.02			ITNA	81MEY 01
1.02	0.03		RTNA	77LIE 01
1.02	0.03		RTNA	75LIE 01
1.02	0.03	9	ITNA	81SUZ 01
1.02	0.04		HAA	80AGE 02
1.02	0.06		IENA	86CHI 01
1.02	0.438	5	RTNA	82TIN 01
1.03		6	FAA	77SHU 01
1.03	0.03		RTNA	77RAI 01
1.03	0.03		ITNA	79RAI 01
1.03	0.04	11	HAA	82JON 01
1.03	0.05		ITNA	80MIC 01
1.03	0.09		ITNA	81MOL 01
1.04			FLUOR	74IHN 01
1.04	0.03		ITNA	86CHI 01
1.04	0.07		ITNA	74WES 01
1.04	0.1		RTNA	80KNA 01
1.045	0.04		ITNA	77EGA 01
1.05		6	FAA	77SHU 01
1.05		7	ICPES	84MIA 01
1.05	0.05		HAA	80VIJ 01
1.05	0.12		RTNA	80SLO 01
1.05	0.19		ITNA	79LAK 01
1.053	0.051		COLOR	79SZY 02
1.06			FAA	78CAP 01
1.06	0.06		RTNA	78GAL 01
1.06	0.06	7	RTNA	80GAL 02
1.06	0.1		RTNA	77TJI 01
1.06	0.11	11	RTNA	82POL 01
1.069	0.016		ITNA	82DAM 01
1.07			RTNA	75STE 02
1.07	0.02		AA	83RAP 01
1.07	0.04		GC-MS	81REA 02
1.07	0.06	5	ITNA	81SUZ 01
1.07	0.1		RTNA	79MAY 01

Se (ug/g) cont.

Conc	Uncer	Com	Method	Reference
1.07	0.11		ITNA	78HIR 01
1.07	0.18		RTNA	79PLA 01
1.07	0.19		RTNA	79ROS 02
1.08	0.01		CSV	83ADE 01
1.08	0.01		ITNA	74LIN 01
1.08	0.015		FAA	80MEV 01
1.08	0.05		ASV	76AND 01
1.08	0.08		AA	84MAT 01
1.08	0.12		ITNA	77GUI 02
1.08	0.13	6	ITNA	74BEC 01
1.08	0.2		FAA	79RAI 01
1.09	0.01		ASV	83ADE 01
1.09	0.02		AA	79FLA 02
1.09	0.02	34	HAA	78FLA 01
1.09	0.04		ITNA	86GRE 01
1.09	0.05		RTNA	74ORV 01
1.09	0.06		HAA	81HAN 01
1.09	0.08		RTNA	79WAR 02
1.1			FAA	77YAS 01
1.1			ITNA	80CRE 01
1.1			ITNA	77OSB 01
1.1			ITNA	78CAP 01
1.1		11	FAA	82VER 03
1.1	0.02		XRF	81KNA 01
1.1	0.05	11	GC	81UCH 02
1.1	0.06	11	GC	81UCH 02
1.1	0.06		FLUOR	80KOH 01
1.1	0.1		GC	77POO 01
1.1	0.1	9	ITNA	80WAN 01
1.1	0.13	11	RTNA	82POL 01
1.1	0.17	9	ITNA	77VOB 01
1.1	0.17	9	ITNA	79PAV 02
1.1	0.17	9	ITNA	77VOB 01
1.1	0.2		EXRF	79GIA 01
1.1	0.2		HAA	82MAY 01
1.1	0.3		ITNA	79ZEI 01
1.1	0.4	5	ITNA	80TOU 01
1.107	0.15		NAA	76GUZ 01
1.11	0.02		SSMS	77PAU 01
1.11	0.03		FAA	82JUL 01
1.11	0.04		SSMS	77ROO 02
1.11	0.05		RTNA	74BYR 03
1.11	0.06		HAA	76IHN 02
1.11	0.08	13	ITNA	73BLO 02
1.11	0.09	12	FAA	84RIN 01
1.11	0.1		ITNA	79CHA 02
1.12	0.02		FLUOR	84ALF 01
1.12	0.03		ASV	75AND 01
1.12	0.075		HAA	81MEY 01
1.12	0.08	11	RTNA	82POL 01
1.12	0.08		RTNA	72ROO 03

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference
Se (ug/g) cont.				
1.12	0.08		RTNA	77ROO 02
1.12	0.09	7	RTNA	81KUC 01
1.12	0.1		ASV	81POS 01
1.12	0.12	6	FLUOR	75OLS 01
1.13		17	UU	74MAS 01
1.13	0.03	11	ASV	84ADE 01
1.13	0.03		AA	85ADE 02
1.13	0.05		ICPES	85NAK 01
1.13	0.09		ITNA	73COR 01
1.133	0.122		ITNA	82MOR 02
1.14	0.04		ITNA	78MCK 01
1.14	0.05		ITNA	80MAE 01
1.14	0.09		HAA	83KOL 01
1.14	0.091		HAA	82TAM 01
1.14	0.11		ITNA	77JUR 02
1.14	0.11		ITNA	79PAV 02
1.14	0.11		ITNA	77VOB 01
1.14	0.11		ITNA	78BEH 01
1.15	0.02		FLUOR	83KOH 01
1.15	0.04		ITNA	80LAK 01
1.15	0.08	11	ASV	84ADE 01
1.16			CSV	81HAN 01
1.16	0.08		FAA	84BAU 01
1.16	0.09	12	FAA	84RIN 01
1.17	0.06	6	FLUOR	75OLS 01
1.17	0.18		HAA	82JUL 01
1.18		11	HAA	85PIW 01
1.18	0.14		RTNA	74HEN 01
1.19	0.11	13	ITNA	73BLO 02
1.2		1	IENA	79KUC 01
1.2			ITNA	79KUC 01
1.2			FAA	77YAS 01
1.2			ICPES	80HAA 01
1.2		7	RTNA	81KUC 01
1.2	0.1		ITNA	80WAN 01
1.2	0.1		RTNA	77MEL 01
1.2	0.1	7	RTNA	80GAL 02
1.2	0.1		ITNA	81KRI 01
1.2	0.1		NAA	77GIL 01
1.2	0.1		RTNA	77GIL 03
1.2	0.1		CPXRF	77WIL 02
1.2	0.11		RTNA	77OMI 01
1.2	0.155		ITNA	77HAM 01
1.2	0.16		HAA	81REA 01
1.2	0.2	11	AA	85BYE 01
1.2	0.2		HAA	81COX 01
1.204	0.124		HAA	77IHN 03
1.22	0.04		COLOR	81TOE 01
1.23		17	UU	74MAS 01
1.24	0.04		GC	81TOE 01
1.24	0.3		CPXRF	85CLA 01
1.26		17	UU	74MAS 01
1.26	0.15	5	FLUOR	81SUZ 01
1.28	0.24		CSV	83AHM 02
1.3	0.4		RTNA	74SCH 03
1.4			FAA	82INU 01
1.4	0.1		EXRF	80DYC 01
1.4	0.5	6	CPXRF	77WIL 03
1.7			ITNA	73NAD 01
1.7	0.1		ITNA	78FUR 01
2.7			ICPES	85NAR 02
7.65	0.277	5	RTNA	82TIN 01
13.376	0.926	5	RTNA	82TIN 01
Se(VI) (ug/g)				
0.3	0.07		GC	81TOE 01
0.31	0.11		COLOR	81TOE 01
Si (ug/g)				
16.7	0.67		ITNA	75PIE 01
16.79	1.84		NAA	76GUZ 01
19		11	SSMS	85VOS 01
246			CPXRF	84KAU 01
Sm (ng/g)				
1	0.2		RTNA	74HEN 01
1.3	0.4		RTNA	80SLO 01
1.5	0.2		RTNA	83TJI 01
1.6			RTNA	82LAU 01
1.6			RTNA	77LAU 02
1.9	0.2		RTNA	76GAU 01
2	0.2		RTNA	86TSU 01
2.8			ITNA	80CRE 01
35	24		RTNA	74SCH 03
Sn (ng/g)				
<	240	L	RTNA	81KUC 01
<	600		RTNA	75LIE 01
<	600	L	RTNA	77LIE 01
<	1500	L	ICPES	78CAP 01
10			HAA	79EVA 01
20	3		RTNA	83GRE 02
20	6		ITNA	86GRE 01
21	3		RTNA	77BYR 01
220	180		ICPES	80HAA 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference
Sr (ng/g)				
100		11	SSMS	85VOS 01
150	20		RTNA	76GAU 01
160			ICPES	78DAH 01
160	20		FAA	82SUZ 03
300	60		ICPES	79ABE 01
500	180	34	CPXRF	78JOL 01
550	440		AA	85EVA 01
2000	800		14NAA	81WIL 02
Ta (ng/g)				
3			ITNA	80CRE 01
Tb (ng/g)				
<	0.2		RTNA	83TJI 01
<	1.6	L	RTNA	76GAU 01
0.17			RTNA	82LAU 01
0.18			RTNA	77LAU 02
2			ITNA	80CRE 01
Te (ng/g)				
90	15		RTNA	77DIK 01
Th (ng/g)				
<	1000	L	EXRF	79GIA 01
3	6	R*	RTNA	80SLO 01
6.8			ITNA	80CRE 01
Ti (ug/g)				
<	0.15	L	ICPES	78CAP 01
<	3.3		CPXRF	84KAU 01
<	4	L	14NAA	81WIL 02
<	11	L	EXRF	79GIA 01
0.7	0.2		COLOR	82KIR 02
1.7	0.2		ICPES	79ABE 01
2	1		CPAA	77ZIK 01
3.2	1		14NAA	81WIL 01
3.8		11	SSMS	85VOS 01
4.7		11	SSMS	85VOS 01
Tl (ng/g)				
<	2	11	ASV	84LIE 01
<	2	11	ASV	84LIE 01
2		11	ASV	84LIE 01
48	3		SSMS	77PAU 01

Conc	Uncer	Com	Method	Reference
Tm (ng/g)				
<	0.3	L	RTNA	76GAU 01
0.1			RTNA	82LAU 01
0.15			RTNA	77LAU 02
U (ng/g)				
<	1		DNA	86GAU 01
<	20	L	ITNA	74WEA 01
<	100	L	RTNA	76GAU 01
<	2000	L	EXRF	79GIA 01
0.99	0.25	35	DNA	80GLA 04
1	1.6		DNA	84GLA 02
20	48	R	DNA	81GLA 03
V (ng/g)				
<	20	L	RTNA	77BUO 01
<	20	L	ITNA	74HOF 01
<	40	L	ITNA	74HOF 01
15	5		COLOR	82KIR 01
33	3		RTNA	79WAR 02
55	1		FAA	77MYR 01
56		17	UU	74MAS 01
56	7		UU	73STE 01
58.6	1.6		RTNA	78BYR 01
59			NAA	80KOS 02
60			ICPES	80HAA 01
60	2		RTNA	80WOI 01
60	5		RTNA	79CHA 02
61.5	2		RTNA	79COR 01
61.5	2		RTNA	81COR 02
65	2		RTNA	82BYR 01
66.2	4.9		RTNA	78ALL 04
90	60	11	ICPES	82JON 01
320	80		RTNA	77GUI 03
370		11	SSMS	85VOS 01
400		11	SSMS	85VOS 01
460			ITNA	78CAP 01
500	100		ITNA	77ZIK 01
600	100		ICPES	79ABE 01
W (ng/g)				
3.8			RTNA	84BYR 01
5		17	UU	74MAS 01
5	3		RTNA	74SCH 03
12			RTNA	76GAU 01
15			RTNA	75STE 02
30		17	UU	74MAS 01
700	100		RTNA	80SLO 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference
Y (ug/g)				
<	1	L	EXRF	79GIA 01
<	14	L	14NAA	81WIL 01
Yb (ng/g)				
<	0.1		RTNA	83TJI 01
0.28			RTNA	82LAU 01
0.285			RTNA	77LAU 02
0.48	0.09		RTNA	76GAU 01
830			ITNA	73NAD 01
Zn (ug/g)				
13.17	17.59	R	AA	79MON 01
32			ASV	74COP 01
65	15		FAA	77FUJ 01
78	25		14NAA	81WIL 01
93	17	12	FAA	85CAR 02
98	122	RD	ITNA	79IMA 03
98	122	R	ITNA	79IMA 01
101		17	UU	74MAS 01
102			FAA	83ATS 01
104			CPXRF	78UEM 01
106	31	12	FAA	85CAR 02
112			XRF	80SUZ 02
112	15		ICPES	81BLA 01
112.6	1.1		FAA	81CLE 02
113	5		FAA	84ROS 01
116			ITNA	73NAD 01
116	18		CPXRF	80MAE 01
117	13		AA	79MAN 01
117.2	10		RTNA	83DAN 01
118		11	ASV	81DAN 01
118	4	6	POL	72SIN 01
118	21		RTNA	82KIM 01
118.2	7.8		IENA	75MAZ 01
119		6	POL	72SIN 01
120		17	UU	74MAS 01
120	6	11	ICPES	81BLA 02
120	12		FAA	84HAR 02
121	10	7	RTNA	84FAR 02
121	13		ICPES	85FAS 01
121.9			RTNA	74RAV 01
122		11	FAA	81DAN 01
122	3		NAA	78GAN 01
122	3		EXRF	80DYC 01
122	9		ITNA	79LAK 01
123	5		ITNA	74WES 01
123	8	7	RTNA	84FAR 02
123	25		ITNA	78FUR 01
123	26		ICPES	84BLA 01

Conc	Uncer	Com	Method	Reference
Zn (ug/g) cont.				
123.8	1.2		FAA	74GRO 01
124		17	UU	74MAS 01
124		6	POL	72SIN 01
124			ITNA	78CAP 01
124	7	7	AA	73TAL 01
124	7		FAA	74TAL 01
124	7.3	11	RTNA	74WES 01
124	10	D	ICPES	80SCH 08
124	10		ICPES	80SCH 05
124	14		CPXRF	79MAN 01
124.4			RTNA	75HAL 01
125			ITNA	79KUC 01
125			RTNA	75STE 02
125	2		AA	79FLA 02
125	5	7	RTNA	80GAL 02
125	5		RTNA	77GIL 03
125	5		NAA	77GIL 01
125	6		AA	83RAP 01
125	16		ITNA	77HAM 01
125.7	10.6	34	CPXRF	78JOL 01
126			FAA	75SLA 01
126	2		ITNA	80MAE 01
126	4	7	AA	73TAL 01
126	4		FAA	74TAL 01
126	4		SSMS	77PAU 01
126	5		ITNA	81MOL 01
126	8		FAA	79WAR 01
126	9		RTNA	74ORV 01
126	71		ITNA	82KIM 01
127		11	FAA	81DAN 01
127		1	IENA	79KUC 01
127	1		RTNA	80SLO 01
127	4		AA	80UCH 01
127	8	11	RTNA	74WES 01
127	9		ITNA	81KRI 01
127.9	9.1	6	ITNA	74BEC 01
128			DCPES	78NAK 01
128		7	RTNA	81KUC 01
128	3		FAA	81CLE 01
128	3.6	11	AA	74WES 01
128	5		ITNA	79SAT 01
128	6		AA	75HIN 01
128	7		RTNA	79DER 01
128	10		CPXRF	80KIR 01
128	12		ITNA	79CHA 02
128	14		EXRF	77NIE 01
128	14		CPAA	77ZIK 01
128	26		ICPES	82AZI 02
128.6			AA	79LOC 01
128.6	0.7		ITNA	82DAM 01
129			ICPES	80HAA 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Zn (ug/g) cont.

Conc	Uncer	Com	Method	Reference
129			ICPES	84NAD 01
129		1	IENA	79KUC 01
129			ITNA	80CRE 01
129	1.5		ITNA	86CHI 01
129	3		ITNA	74DON 01
129	4		RTNA	79WAR 02
129	4		ITNA	79WAR 01
129	8		ITNA	80LAK 01
129	16	32	CPXRF	77CRO 01
129.2	6		ITNA	84ALK 01
130			OES	75BOL 02
130		11	AA	81MOH 01
130	4	11	ICPES	81BLA 02
130	4.5		AA	84HUD 01
130	4.5	D	AA	84HUD 03
130	5	1	ICPES	78SUD 01
130	7		CPXRF	78VIS 01
130	13		FAA	80LON 01
130	22		AA	82HAR 01
131			AF	85NAR 02
131		14	FAA	80CHA 08
131		17	UU	74MAS 01
131	1		AA	75ABU 01
131	1		AA	75EPS 01
131	1		ICPES	79MCQ 02
131	1.4		AA	80AGE 01
131	2		ICPES	79MCQ 01
131	4		ITNA	80MIC 01
131	13.5		PAA	76KAT 04
131	37		EXRF	84KNA 01
131.8	6.5		ITNA	73COR 01
132	1		AF	75EPS 01
132	3		GC	81BLA 01
132	3.3	6	CPXRF	77WIL 03
132	5		AA	79MCQ 01
132	6	7	RTNA	81KUC 01
132	7	1	AA	77UCH 02
132	7		AA	80IID 01
132	10		CPXRF	81SAI 01
132	15		ICPES	83SCH 04
133		11	ASV	81DAN 01
133			CPXRF	84KAU 01
133		14	FAA	80CHA 08
133	4	7	RTNA	84FAR 02
133	6		ICPES	78JAC 01
133	7		ITNA	77JUR 02
133	7		ITNA	78BEH 01
133.9	6.8		ITNA	79ZEI 01
134			ICPES	85NAR 02
134		17	UU	74MAS 01
134	2		RTNA	77MEL 01

Zn (ug/g) cont.

Conc	Uncer	Com	Method	Reference
134	2		EXRF	79GIA 01
134	3		AA	79WAR 01
134	4	1	AA	77UCH 02
134	5	7	AE+AF	73TAL 01
134	5		FAE	74TAL 01
134	5		RTNA	77TJI 01
134	6	11	ICPES	82JON 01
134	7	11	ICPES	82JON 01
134	7.2		RTNA	79PLA 01
134	10	7	AE+AF	73TAL 01
134	10		FAE	74TAL 01
135		17	UU	74MAS 01
135			AE+AF	79ULL 01
135			ICPES	78CAP 01
135	1		ITNA	74LIN 01
135	2	11	ICPES	82JON 01
135	2		ICPES	85WOL 01
135	4	11	ICPES	82JON 01
135	5		CPXRF	85CLA 01
135	5		RTNA	75LIE 01
135	5		RTNA	77LIE 01
135	6		IENA	86CHI 01
135	7		AA	84CUB 01
136		11	XRF	83PEL 01
136		17	UU	74MAS 01
136	1.8	6	DCPES	83FRA 01
136	3		HPLC	85SAI 01
136	6		RTNA	76GAU 01
136	9		RTNA	74HEN 01
137	2		ASV	85ADE 01
137	4		ITNA	74GUI 01
137	9	5	ITNA	80TOU 01
137.2	5.75		NAA	76GUZ 01
138	3		ITNA	86GRE 01
139		17	UU	74MAS 01
139		11	SSMS	85VOS 01
139	5		ICPES	82EVA 01
140			ITNA	77OSB 01
140		11	AA	81MOH 01
140			ICPES	78DAH 01
140	2.4	6	DCPES	83FRA 01
140	16		RTNA	77KUS 01
140	29		XRF	77SMI 04
141	2	D	DCPES	81REE 01
141	2		DCPES	79REE 01
141	16	5	RTNA	74SCH 03
141.7	5.3	6	ITNA	74BEC 01
142			AA	80EVA 01
142	4		AA	82EVA 01
142	11		ITNA	77ZIK 01
143	19		ICPES	79ABE 01

TABLE 1577-2: INDIVIDUAL DATA FOR NBS SRM 1577 (cont.)

Conc	Uncer	Com	Method	Reference
Zn (ug/g) cont.				
144	12	6	CPXRF	77WIL 03
144	17		CPXRF	84BIS 01
145			FAA	78CAP 01
145		11	SSMS	85VOS 01
145	5		CPXRF	77WIL 02
145.5			ITNA	82AKA 01
146	12		ICPES	82AZI 01
147	7.3	11	AA	74WES 01
148	15		CPAA	78MCG 01
148	74		CPXRF	76ZEI 01
150	10		PAA	76WIL 01
153	2		ICPES	85WHI 02
156	6.2		CPXRF	81ROB 02
157	20	1	ICPES	78SUD 01
159	8	5	RTNA	74SCH 03
160		17	UU	74MAS 01
160		17	UU	74MAS 01
162	31	32	CPXRF	77CRO 01
200	40		14NAA	81WIL 02
Zr (ug/g)				
<	0.5	L	14NAA	81WIL 02
<	3	L	14NAA	81WIL 01
<	3	L	EXRF	79GIA 01
0.09	0.08		PAA	84SAT 01
1.6		11	SSMS	85VOS 01
3.4	0.4		PAA	79CHA 02
4	3		CPAA	77ZIK 01

TABLE 1577A-1: COMPILED DATA FOR NBS SRM 1577A BOVINE LIVER (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		XRF		OTHER METHODS		
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean	(n)	Mean ± SD	(n)	Method
Ag	ng/g	40 ± 10	---		---	---	---		---		---		---		
Al	ug/g	2	3.4	(1)	---	---	---		3.4	(1)	---		---		
As	ng/g	47 ± 6	48 ± 8	(3)	49	40 - 56	40	(1)	52.5	(2)	---		---		
Br	ug/g	9	9.6 ± 1.3	(4)	9	8.5 - 11.2	---		9.6 ± 1.2	(4)	---		---		
Ca	ug/g	120 ± 7	121 ± 5	(26)	123	111.3 - 129.7	121 ± 5	(25)	---		127	(1)	145	(1)	ICPMS
Cd	ng/g	440 ± 60	455	(2)	---	440 - 470	470	(1)	440	(1)	---		---		
Cl	ug/g	2800 ± 100	2700 ± 110	(4)	2650	2570 - 2800	---		2700 ± 110	(4)	---		---		
Co	ng/g	210 ± 50	249	(2)	---	244 - 254	---		249	(2)	---		---		
Cr	ug/g	---	1.0	(1)	---	---	---		1.0	(1)	---		---		
Cu	ug/g	158 ± 7	149 ± 14	(30)	153.6	114.2 - 164	149 ± 14	(24)	155 ± 12	(3)	145	(2)	160	(1)	ICPMS
Fe	ug/g	194 ± 20	155 ± 17	(25)	155.9	116.1 - 181	153 ± 16	(22)	181	(1)	163.5	(2)	---		
Hg	ng/g	4 ± 2	3.15	(2)	---	3 - 3.3	---		3.15	(2)	---		---		
I	ng/g	---	243	(2)	---	240 - 246	---		243	(2)	---		---		
K	%	0.996 ± 0.007	1.00 ± 0.13	(3)	0.95	0.894 - 1.15	---		1.05	(2)	---		0.894	(1)	ICPMS
Mg	ug/g	600 ± 15	612 ± 36	(3)	624	571 - 640	---		606	(2)	---		624	(1)	ICPMS
Mn	ug/g	9.9 ± 0.8	9.9 ± 0.4	(34)	9.8	9.1 - 10.8	9.9 ± 0.4	(29)	9.7 ± 0.6	(3)	10.5	(1)	9.1	(1)	ICPMS
Mo	ug/g	3.5 ± 0.5	3.43	(2)	---	3.4 - 3.47	---		3.44	(2)	---		---		
N	%	10.7	---		---	---	---		---		---		---		
Na	ug/g	2430 ± 130	2410 ± 220	(3)	2450	2170 - 2600	---		2525	(2)	---		2170	(1)	ICPMS
P	%	1.11 ± 0.04	1.18	(1)	---	---	---		---		---		1.18	(1)	ICPMS
Pb	ng/g	135 ± 15	168 ± 29	(4)	150	150 - 210	150	(1)	---		---		170 ± 30	(3)	DCPES
Rb	ug/g	12.5 ± 0.1	12.2	(1)	---	---	---		12.2	(1)	---		---		
S	ug/g	7800 ± 100	8300 ± 500	(4)	7900	7845 - 8860	---		---		8860	(1)	7845	(1)	IDMS
S	ug/g	---	---		---	---	---		---		---		7900	(1)	ICPMS
S	ug/g	---	---		---	---	---		---		---		8550	(1)	CB
S-32/34	ratio	---	22.555	(1)	---	---	---		---		---		22.555	(1)	IDMS
S-33/34	ratio	---	0.1776	(1)	---	---	---		---		---		0.1776	(1)	IDMS
Sb	ng/g	3	31	(1)	---	---	---		31	(1)	---		---		
Sc	ng/g	---	0.8	(1)	---	---	---		0.8	(1)	---		---		
Se	ng/g	710 ± 70	780 ± 200	(5)	779	580 - 1100	875	(2)	685	(2)	779	(1)	---		
Sr	ng/g	138 ± 3	---		---	---	---		---		---		---		
Tl	ng/g	3	---		---	---	---		---		---		---		
U	ng/g	0.71 ± 0.03	0.704	(1)	---	---	---		< 1		---		0.704	(1)	IDMS
V	ng/g	99 ± 8	97	(2)	---	96 - 98.7	---		96	(1)	---		98.7	(1)	IDMS
Zn	ug/g	123 ± 8	122 ± 4	(27)	122.8	111.6 - 130.1	122 ± 4	(25)	127	(1)	126	(1)	-		

TABLE 1577A-2: INDIVIDUAL DATA FOR NBS SRM 1577A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (ug/g)				
3.4	0.8		ITNA	84GLA 11
As (ng/g)				
40	10		HAA	85SAL 01
49	4		RTNA	85GAU 04
56	3		RTNA	84BYR 02
Br (ug/g)				
8.5	1		IENA	84GLA 11
9	0.9		ITNA	84GLA 11
9.7			ITNA	85GAU 04
11.2			IENA	85GAU 04
Ca (ug/g)				
25	1.1	11	AA	84IMA 02
26.1	1.4	11	AA	84IMA 02
111.3		11	AA	84IMA 02
112.9		11	AA	84IMA 02
113.2	2.6	11	AA	84IMA 02
113.5		11	AA	84IMA 02
115.7	3.5	11	AA	84IMA 02
116.2		11	AA	84IMA 02
117.3	10.3	11	AA	84IMA 02
117.6		11	AA	84IMA 02
117.7	27.9	11	AA	84IMA 02
118.6		11	AA	84IMA 02
120.7		11	AA	84IMA 02
121.3		11	AA	84IMA 02
122.2	3.3	11	AA	84IMA 02
123		11	AA	84IMA 02
124.1	8.4	11	AA	84IMA 02
124.1	9.1	11	AA	84IMA 02
124.1	9.2	11	AA	84IMA 02
124.7		11	AA	84IMA 02
124.9		11	AA	84IMA 02
125	0.2	11	AA	84IMA 02
126.5	9.1	11	AA	84IMA 02
126.5	9.1	11	AA	84IMA 02
127	9		CPXRF	85SIM 01
127.6	12	11	AA	84IMA 02
129.3	1.4	11	AA	84IMA 02
129.7	13.2	11	AA	84IMA 02
145	3		ICPMS	86SCI 01
160	60		ITNA	84GLA 11

Conc	Uncer	Com	Method	Reference
Cd (ng/g)				
440	10		RTNA	84BYR 02
470	10		FAA	85SAL 01
Cl (ug/g)				
2570			ITNA	85GAU 04
2650	300		IENA	84GLA 11
2780	150		ITNA	84GLA 11
2800	100		ITNA	86KRA 01
Co (ng/g)				
244	12		ITNA	86KRA 01
254	21		RTNA	84BYR 02
Cr (ug/g)				
1	0.3		ITNA	86KRA 01
Cu (ug/g)				
62.3		11	AA	84IMA 02
73.7		11	AA	84IMA 02
100.5	2.4	11	AA	84IMA 02
108.9		11	AA	84IMA 02
114.2		11	AA	84IMA 02
126	0.5	11	AA	84IMA 02
129.2	2.7	11	AA	84IMA 02
129.4	7.2	11	AA	84IMA 02
131		11	XRF	83PEL 01
136.1	4.1	11	AA	84IMA 02
136.6	2.2	11	AA	84IMA 02
137.2		11	AA	84IMA 02
141	5		RTNA	84BYR 02
142.9		11	AA	84IMA 02
149.1	4.9	11	AA	84IMA 02
149.9	4.2	11	AA	84IMA 02
151.4	12.7	11	AA	84IMA 02
153.6		11	AA	84IMA 02
153.6	8.3	11	AA	84IMA 02
154.8		11	AA	84IMA 02
156	4		AA	85SAL 01
157.6	1.2	11	AA	84IMA 02
159		11	XRF	83PEL 01
159	6		ITNA	84GLA 11
159.1		11	AA	84IMA 02
159.1	5.5	11	AA	84IMA 02
160	0.6		ICPMS	86SCI 01
160.4		11	AA	84IMA 02
160.7	9.3	11	AA	84IMA 02

TABLE 1577A-2: INDIVIDUAL DATA FOR NBS SRM 1577A (cont.)

Conc	Uncer	Com	Method	Reference
Cu (ug/g) cont.				
162.7	6.5	11	AA	84IMA 02
162.7	6.5	11	AA	84IMA 02
163.1	3.2	11	AA	84IMA 02
163.6		11	AA	84IMA 02
164	10		ITNA	86KRA 01
Fe (ug/g)				
67.2	9.2	11	AA	84IMA 02
82.1	3.8	11	AA	84IMA 02
95.8		11	AA	84IMA 02
105.9		11	AA	84IMA 02
116.1		11	AA	84IMA 02
119.8	1.6	11	AA	84IMA 02
135.1		11	AA	84IMA 02
136.9	8.6	11	AA	84IMA 02
140		11	AA	84IMA 02
147		11	AA	84IMA 02
147.8	7.4	11	AA	84IMA 02
148.3	3.5	11	AA	84IMA 02
149		11	XRF	83PEL 01
149.7	10.8	11	AA	84IMA 02
155.8		11	AA	84IMA 02
155.9	5.4	11	AA	84IMA 02
156.2	5.7	11	AA	84IMA 02
156.7	5.4	11	AA	84IMA 02
160.2	9.4	11	AA	84IMA 02
162.6		11	AA	84IMA 02
164.1	6.7	11	AA	84IMA 02
168.2		11	AA	84IMA 02
168.3	4.4	11	AA	84IMA 02
170.9		11	AA	84IMA 02
170.9	9.8	11	AA	84IMA 02
170.9	9.8	11	AA	84IMA 02
172.4		11	AA	84IMA 02
178		11	XRF	83PEL 01
181	28		ITNA	86KRA 01
202	2		ICPMS	86SCI 01
204.1	49	11	AA	84IMA 02
Hg (ng/g)				
<	10		CVAA	85SAL 01
3	0.2		RTNA	84DEL 01
3.3	0.5		RTNA	84BYR 02
I (ng/g)				
<	400		ITNA	84GLA 11
240	30		IENA	84GLA 11
246	11		RTNA	84BYR 02

Conc	Uncer	Com	Method	Reference
K (%)				
0.894	0.03		ICPMS	86SCI 01
0.95	0.02		ITNA	84GLA 11
1.15	0.17		ITNA	86KRA 01
Mg (ug/g)				
571	57		ITNA	86KRA 01
624	2		ICPMS	86SCI 01
640	30		ITNA	84GLA 11
Mn (ug/g)				
8.4		11	AA	84IMA 02
9.1		11	AA	84IMA 02
9.1	0.08		ICPMS	86SCI 01
9.1	0.4		RTNA	84BYR 02
9.1	0.8	11	AA	84IMA 02
9.4		11	AA	84IMA 02
9.5		11	AA	84IMA 02
9.5	0.6	11	AA	84IMA 02
9.5	0.6	11	AA	84IMA 02
9.58	0.38	6	FAA	85DOU 01
9.7		11	AA	84IMA 02
9.7	0.2	11	AA	84IMA 02
9.7	0.3	11	AA	84IMA 02
9.8		11	AA	84IMA 02
9.8		11	AA	84IMA 02
9.8		11	AA	84IMA 02
9.8		11	AA	84IMA 02
9.8	0.4		ITNA	86KRA 01
9.8	0.4	11	AA	84IMA 02
9.9	0.3	11	AA	84IMA 02
9.9	0.3	11	AA	84IMA 02
9.9	0.4	11	AA	84IMA 02
10.1	0.1	11	AA	84IMA 02
10.1	0.3	11	AA	84IMA 02
10.1	0.7	11	AA	84IMA 02
10.2	0.1	11	AA	84IMA 02
10.2	0.7	6	FAA	85DOU 01
10.3		11	AA	84IMA 02
10.3	0.5		ITNA	84GLA 11
10.3	1	6	FAA	85DOU 01
10.4	0.6	11	AA	84IMA 02
10.5		11	XRF	83PEL 01
10.5		11	AA	84IMA 02
10.7	0.2	11	AA	84IMA 02
10.8	0.4	11	AA	84IMA 02

TABLE 1577A-2: INDIVIDUAL DATA FOR NBS SRM 1577A (cont.)

Conc	Uncer	Com	Method	Reference
Mo (ug/g)				
3.4	1.2		ITNA	86KRA 01
3.47	0.01		RTNA	84BYR 02
Na (ug/g)				
2170	70		ICPMS	86SCI 01
2450	30		ITNA	86KRA 01
2600	200		ITNA	84GLA 11
P (%)				
1.18	0.005		ICPMS	86SCI 01
Pb (ng/g)				
150		6	DCPES	84SNE 01
150	10		FAA	85SAL 01
160		6	DCPES	84SNE 01
210		6	DCPES	84SNE 01
Rb (ug/g)				
12.2	0.7		ITNA	86KRA 01
S (ug/g)				
7845	46		IDMS	84KEL 01
7900	200		ICPMS	86SCI 01
8550	70		CB	86BOW 01
8860	170		WXRF	86BOW 01
S-32/34 (ratio)				
22.555			IDMS	84KEL 01
S-33/34 (ratio)				
0.1776			IDMS	84KEL 01
Sb (ng/g)				
31	1		RTNA	84BYR 02
Sc (ng/g)				
0.8			ITNA	84GLA 11
Se (ng/g)				
580	90		RTNA	84BYR 02
650	40		HAA	85SAL 01
779	34		CPXRF	84BUS 01
790	180		ITNA	86KRA 01
1100	100		HAA	85CUT 01
U (ng/g)				
<	1		DNA	86GAU 01
0.704	0.012		IDMS	83KEL 01
V (ng/g)				
96	4		RTNA	84BYR 02
98.7	1.6		IDMS	85FAS 02
Zn (ug/g)				
109.6		11	AA	84IMA 02
109.6		11	AA	84IMA 02
111.6		11	AA	84IMA 02
115.4	8.1	11	AA	84IMA 02
116.4		11	AA	84IMA 02
117	4.4	11	AA	84IMA 02
117.9		11	AA	84IMA 02
118		11	AA	84IMA 02
119	3.3	11	AA	84IMA 02
120	5.2	11	AA	84IMA 02
120.9		11	AA	84IMA 02
122	2		AA	85SAL 01
122.8	6	11	AA	84IMA 02
122.8	6	11	AA	84IMA 02
122.8	10.9	11	AA	84IMA 02
122.9		11	AA	84IMA 02
123.9	1.3	11	AA	84IMA 02
124.1	1.7	11	AA	84IMA 02
124.5	2.3	11	AA	84IMA 02
125.3	2.2	11	AA	84IMA 02
125.5	3.5	11	AA	84IMA 02
126		11	XRF	83PEL 01
126.1		11	AA	84IMA 02
126.4	2.6	11	AA	84IMA 02
126.8	1.5	11	AA	84IMA 02
126.9	9.7	11	AA	84IMA 02
127	3		ITNA	86KRA 01
127.5		11	AA	84IMA 02
130.1	2.1	11	AA	84IMA 02

TABLE 1580-1: COMPILED DATA FOR NBS SRM 1580 ORGANICS IN SHALE OIL (revised 3/1/86)

COMPOUND	CAS #	UNITS	NBS Mean ± SD
Benzo[a]pyrene	50328	ug/g	21 ± 6
Benzo[e]pyrene	192972	ug/g	18 ± 8
Benzo[f]quinoline	85029	ug/g	16 ± 4
m-Cresol	108394	ug/g	330
o-Cresol	95487	ug/g	385 ± 50
p-Cresol	106445	ug/g	270
2,4-Dimethylphenol	105679	ug/g	380
2,5-Dimethylphenol	95874	ug/g	320
2,6-Dimethylphenol	576261	ug/g	175 ± 30
Fluoranthene	206440	ug/g	54 ± 10
Perylene	198550	ug/g	3.4 ± 2.2
Phenanthridine	229878	ug/g	45
Phenol	108952	ug/g	407 ± 50
Pyrene	129000	ug/g	104 ± 18
2,5,6-Trimethylphenol	2416946	ug/g	360
2,4,6-Trimethylphenol	527606	ug/g	120

TABLE 1581-1: COMPILED DATA FOR NBS SRM 1581 POLYCHLORINATED BIPHENYLS IN OILS
(revised 3/1/86)

COMPOUND	CAS #	UNITS	NBS Mean ± SD
Aroclor 1242 in Motor Oil	53469219	ug/g	100 ± 1
Aroclor 1260 in Motor Oil	11096825	ug/g	100 ± 2
Aroclor 1242 in Transformer Oil	53469219	ug/g	100 ± 1
Aroclor 1260 in Transformer Oil	11096825	ug/g	100 ± 3

TABLE 1583-1: COMPILED DATA FOR NBS SRM 1583 CHLORINATED PESTICIDES IN 2,2,4-TRIMETHYLPENTANE
(revised 3/1/86)

COMPOUND	CAS #	UNITS	NBS Mean ± SD
gamma-BHC	58899	ug/g	1.11 ± 0.01
delta-BHC	319868	ug/g	0.76 ± 0.01
Aldrin	309002	ug/g	0.86 ± 0.01
p,p'-DDE	72559	ug/g	1.23 ± 0.03
p,p'-DDT	50293	ug/g	1.90 ± 0.10
Heptachlor Epoxide	1024573	ug/g	1.0

TABLE 1582-1: COMPILED DATA FOR NBS SRM 1582 PETROLEUM CRUDE OIL (revised 3/1/86)

COMPOUND	CAS #	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	METHOD MEANS Mean (n) Method
Benz[a]anthracene	56553	ug/g	3.0 ± 0.3	---	---	---	---
Benzo[ghi]perylene	191242	ug/g	---	1.7 (1)	---	---	1.7 (1) GC-MS
	192242	ug/g	1.7	---	---	---	---
Benzo[a]pyrene	50328	ug/g	1.1 ± 0.3	1.08 ± 0.12 (3)	1.1	0.95 - 1.2	1.2 (1) HPLC
	50328	ug/g	---	---	---	---	1.02 (2) GC-MS
Benzo[e]pyrene	192972	ug/g	3.5	---	---	---	---
Carbazole	86748	ug/g	3.4	---	---	---	---
o-Cresol	95487	ng/g	500	---	---	---	---
Dibenzothiophene	132650	ug/g	33 ± 2	---	---	---	---
Fluoranthene	206440	ug/g	2.5 ± 0.3	---	---	---	---
Indeno[1,2,3-cd]pyrene	193395	ng/g	170	170 (1)	---	---	170 (1) GC-MS
Perylene	198550	ug/g	31 ± 3	30.9 ± 1.4 (3)	30.2	30 - 32.6	30.1 (2) GC-MS
	198550	ug/g	---	---	---	---	32.6 (1) HPLC
Phenanthrene	85018	ug/g	101 ± 5	---	---	---	---
Phenol	108952	ng/g	300	---	---	---	---
Pyrene	129000	ug/g	7	---	---	---	---

TABLE 1582-2: INDIVIDUAL DATA FOR NBS SRM 1582
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Benzo[ghi]perylene (ug/g)				
1.7	0.1		GC-MS	84HIL 01
Benzo[a]pyrene (ug/g)				
0.95	0.05		GC-MS	84HIL 01
1.1	0.23		GC-MS	84HIL 01
1.2	0.1		HPLC	84HIL 01
Indeno[1,2,3-cd]pyrene (ng/g)				
170	40		GC-MS	84HIL 01
Perylene (ug/g)				
30	1.1		GC-MS	84HIL 01
30.2	1.7		GC-MS	84HIL 01
32.6	1.2		HPLC	84HIL 01

TABLE 1584-1: COMPILED DATA FOR NBS SRM 1584 PRIORITY POLLUTANT PHENOLS IN METHANOL
(revised 3/1/86)

COMPOUND	CAS #	UNITS	NBS Mean ± SD	CONSENSUS Mean (n)	METHOD
4-Chloro-m-cresol	59507	ug/mL	27.4 ± 0.4	---	
2-Chlorophenol	95578	ug/mL	64.4 ± 1.4	---	
o-Cresol	108394	ug/mL	---	< 1	GC
2,4-Dichlorophenol	120832	ug/mL	35.6 ± 1.3	---	
2,3-Dimethylphenol	526750	ug/mL	---	< 1	GC
2,4-Dimethylphenol	105679	ug/mL	51.6 ± 0.2	48.6 (1)	GC
2,6-Dimethylphenol	576261	ug/mL	---	< 1	GC
3,4-Dimethylphenol	95658	ug/mL	---	< 1	GC
4,6-Dinitro-o-cresol	534521	ug/mL	20.1 ± 0.9	---	
2,4-Dinitrophenol	51285	ug/mL	22.4	---	
m-Ethylphenol	620177	ug/mL	---	< 1	GC
o-Ethylphenol	90006	ug/mL	---	< 1	GC
p-Ethylphenol	1230709	ug/mL	---	< 1	GC
2-Methylphenol	95487	ug/mL	---	< 1	GC
2-Nitrophenol	88755	ug/mL	25.2 ± 0.7	---	
4-Nitrophenol	100027	ug/mL	20.7 ± 0.7	---	
Pentachlorophenol	87865	ug/mL	15.4 ± 1.1	---	
Phenol	108952	ug/mL	29.7 ± 0.9	27.2 (1)	GC
2,4,6-Trichlorphenol	88062	ug/mL	20.4 ± 1.9	---	

TABLE 1584-2: INDIVIDUAL DATA FOR NBS SRM 1584 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
o-Cresol (ug/mL)				
<	1		GC	85GAU 04
2,3-Dimethylphenol (ug/mL)				
<	1		GC	85GAU 04
2,4-Dimethylphenol (ug/mL)				
48.6			GC	85GAU 04
2,6-Dimethylphenol (ug/mL)				
<	1		GC	85GAU 04
3,4-Dimethylphenol (ug/mL)				
<	1		GC	85GAU 04
m-Ethylphenol (ug/mL)				
<	1		GC	85GAU 04
o-Ethylphenol (ug/mL)				
<	1		GC	85GAU 04
p-Ethylphenol (ug/mL)				
<	1		GC	85GAU 04
2-Methylphenol (ug/mL)				
<	1		GC	85GAU 04
Phenol (ug/mL)				
27.2			GC	85GAU 04

TABLE 1585-1: COMPILED DATA FOR NBS SRM 1585 CHLORINATED BIPHENYLS IN ISOOCTANE
(revised 3/1/86)

COMPOUND	CAS #	UNITS	NBS Mean ± SD
4-Chlorobiphenyl	2051629	ug/g	43.3 ± 1.0
4,4'-Dichlorobiphenyl	2050682	ug/g	9.53 ± 0.08
2,4,4'-Trichlorobiphenyl	7012375	ug/g	3.70 ± 0.02
2,2',5,5'-Tetrachlorobiphenyl	35693993	ug/g	7.72 ± 0.06
3,3',4,4'-Tetrachlorobiphenyl	32598133	ug/g	6.62 ± 0.05
2.2',4,5,5'-Pentachlorobiphenyl	37680732	ug/g	5.24 ± 0.02
2,2',3,4,4',5'-Hexachlorobiphenyl	35065282	ug/g	2.37 ± 0.02
2,2',4,4',5,5'-Hexachlorobiphenyl	35065271	ug/g	3.06 ± 0.02

TABLE 1587-1: COMPILED DATA FOR NBS SRM 1587 NITRATED POLYCYCLIC AROMATIC HYDROCARBONS IN METHANOL
(revised 3/1/86)

COMPOUND	CAS #	UNITS	NBS Mean ± SD
2-Nitrofluorene	607578	ug/g	9.67 ± 0.39
9-Nitroanthracene	602608	ug/g	5.01 ± 0.11
3-Nitrofluoranthene	829217	ug/g	9.24 ± 0.06
1-Nitropyrene	5522430	ug/g	8.95 ± 0.28
7-Nitrobenz[a]anthracene	20268513	ug/g	9.27 ± 0.23
6-Nitrochrysene	7496028	ug/g	8.13 ± 0.11
6-Nitrobenzo[a]pyrene	63041907	ug/g	6.1

TABLE 1589-1: COMPILED DATA FOR NBS SRM 1589 POLYCHLORINATED BIPHENYLS IN HUMAN SERUM
(revised 3/1/86)

COMPOUND	CAS #	UNITS	NBS Mean + SD
Aroclor 1260	11096825	ng/g	106.0 ± 1.3
1,2,3,4-Tetrachlorodibenzo-p-dioxin	30746588	ng/g	0.153
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	ng/g	0.081

TABLE 1590-1: COMPILED DATA FOR NBS SRM 1590 STABILIZED WINE (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean (n)	METHOD
As	ug/L	---	5.8 (1)	NAA
Cu	ug/L	300	270 (1)	NAA
Fe	mg/L	6	---	
K	mg/L	320	---	
Mn	ug/L	---	423 (1)	NAA
Na	mg/L	95	---	
Zn	ug/L	---	197 (1)	NAA
Volatile Acidy	g/L	0.24	---	
Ethanol	%	18.51 ± 0.16	---	

TABLE 1590-2: INDIVIDUAL DATA FOR NBS SRM 1590 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
As (ug/L)					Mn (ug/L)				
5.8			RTNA	84BYR 02	423	11		RTNA	84BYR 02
Cu (ug/L)					Zn (ug/L)				
270	14		RTNA	84BYR 02	197	14		RTNA	84BYR 02

TABLE 1614-1: COMPILED DATA FOR NBS SRM 1614 DIOXIN IN ISOOCTANE (revised 3/1/86)

COMPOUND	CAS #	UNITS	NBS Mean
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	ng/g	98.3
2,3,7,8-Tetrachlorodibenzo-p-dioxin, C-13	76523405	ng/g	95.6

TABLE 1639-1: COMPILED DATA FOR NBS SRM 1639 HALOCARBONS IN METHANOL (revised 3/1/86)

COMPOUND	CAS #	UNITS	NBS Mean
Chloroform	67663	ng/uL	6235
Chlorodibromomethane	124481	ng/uL	124.6
Bromodichloromethane	74975	ng/uL	389.9
Bromoform	75252	ng/uL	86.5
Carbon Tetrachloride	56235	ng/uL	157.0
Trichloroethylene	79016	ng/uL	85.8
Tetrachloroethylene	127184	ng/uL	40.6

TABLE 1618-1: COMPILED DATA FOR NBS SRM 1618 VANADIUM AND NICKEL IN RESIDUAL FUEL OIL
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD
ASH	%	0.083
Ni	ug/g	75.2 ± 0.4
S	%	4.3
V	ug/g	423.1 ± 3.4

TABLE 1619-1: COMPILED DATA FOR NBS SRM 1619 SULFUR IN RESIDUAL FUEL OIL
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS	METHOD
Al	ug/g	4.3	---	---
Al	ug/mL	4	---	---
As	ng/g	---	94 (1)	NAA
B	ug/g	< 1.1	---	---
B	ug/mL	< 1	---	---
Br	ng/g	---	700 (1)	NAA
Ca	ug/g	10.6	---	---
Ca	ug/mL	10	---	---
Cl	ug/g	---	20 (1)	NAA
Co	ng/g	---	350 (1)	NAA
Cr	ng/g	< 1100	380 (1)	NAA
Cr	ug/mL	< 1	---	---
Cu	ug/g	< 1.1	---	---
Cu	ug/mL	< 1	---	---
Density	g/cm3	0.939	---	---
Eu	ug/g	---	10.2 (1)	NAA
Fe	ug/g	< 5.3	23 (1)	NAA
Fe	ug/mL	< 5	---	---
La	ng/g	---	37 (1)	NAA
Mg	ug/g	1.1	---	---
Mg	ug/mL	1	---	---
Mn	ug/g	< 1.1	---	---
Mn	ug/mL	< 1	---	---
Mo	ug/g	< 1.1	---	---
Mo	ug/mL	< 1	---	---
Na	ug/g	18	27 (1)	NAA
Na	ug/mL	17	---	---
Ni	ug/g	9.6	12 (1)	NAA
Ni	ug/mL	9	---	---
S	ug/g	7190 ± 70	7215 (2)	NM
Sb	ng/g	---	30 (1)	NAA
Sc	ug/g	---	1.39 (1)	NAA
Se	ng/g	---	95 (1)	NAA
Si	ug/g	2.2	---	---
Si	ug/mL	2	---	---
Sm	ug/g	---	2.45 (1)	NAA
Sn	ug/g	< 1.1	---	---
Sn	ug/mL	< 1	---	---
Ti	ug/g	< 1.1	---	---
Ti	ug/mL	< 1	---	---
V	ug/g	37	42.6 (1)	NAA
V	ug/mL	35	---	---
Zn	ug/g	4.3	1.27 (1)	NAA
Zn	ug/mL	4	---	---

TABLE 1619-2: INDIVIDUAL DATA FOR NBS SRM 1619 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
As (ng/g)				
94	10		ITNA	85FIL 02
Br (ng/g)				
700	900		ITNA	85FIL 02
Cl (ug/g)				
20	1.8		ITNA	83LI 01
Co (ng/g)				
350	40		ITNA	85FIL 02
Cr (ng/g)				
380	110		ITNA	85FIL 02
Eu (ug/g)				
10.2	2.4		ITNA	85FIL 02
Fe (ug/g)				
23	16		ITNA	85FIL 02
La (ng/g)				
37	6		ITNA	85FIL 02
Na (ug/g)				
27	6		ITNA	85FIL 02
Ni (ug/g)				
12	1.1		ITNA	85FIL 02
S (ug/g)				
7130	110	7	NM	83LI 01
7300	180	7	NM	83LI 01
Sb (ng/g)				
30	20		ITNA	85FIL 02
Sc (ug/g)				
1.39	0.67		ITNA	85FIL 02
Se (ng/g)				
95	27		ITNA	85FIL 02
Sm (ug/g)				
2.45	0.47		ITNA	85FIL 02
V (ug/g)				
42.6	4.7		ITNA	85FIL 02
Zn (ug/g)				
1.27	0.35		ITNA	85FIL 02

TABLE 1620-1: COMPILED DATA FOR NBS SRM 1620 SULFUR IN RESIDUAL FUEL OIL (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD
S	%	4.48 ± 0.02

TABLE 1620A-1: COMPILED DATA FOR NBS SRM 1620A SULFUR IN RESIDUAL FUEL OIL (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD	(n)	MEDIAN	RANGE	METHOD MEANS Mean	(n)	Method
Al	ug/g	18	---		---	---	---		
Al	ug/mL	20	---		---	---	---		
As	ng/g	---	40	(1)	---	---	40	(1)	NAA
B	ug/g	< 0.9	---		---	---	---		
B	ug/mL	< 1	---		---	---	---		
Br	ng/g	---	600	(1)	---	---	600	(1)	NAA
Ca	ug/g	8.2	---		---	---	---		
Ca	ug/mL	9	---		---	---	---		
Cl	ug/g	---	11.8	(1)	---	---	11.8	(1)	NAA
Co	ng/g	---	80	(1)	---	---	80	(1)	NAA
Cr	ng/g	< 900	200	(1)	---	---	200	(1)	NAA
Cr	ug/mL	< 1	---		---	---	---		
Cu	ug/g	< 0.9	---		---	---	---		
Cu	ug/mL	< 1	---		---	---	---		
Density	g/cm3	1.096	---		---	---	---		
Eu	ng/g	---	10	(1)	---	---	10	(1)	NAA
Fe	ug/g	< 4.6	11	(1)	---	---	11	(1)	NAA
Fe	ug/mL	< 5	---		---	---	---		
Flash Pt.	deg. C	70	---		---	---	---		
La	ng/g	---	500	(1)	---	---	500	(1)	NAA
Mg	ug/g	< 0.9	---		---	---	---		
Mg	ug/mL	< 1	---		---	---	---		
Mn	ug/g	< 0.9	---		---	---	---		
Mn	ug/mL	< 1	---		---	---	---		
Mo	ug/g	< 0.9	---		---	---	---		
Mo	ug/mL	< 1	---		---	---	---		
Na	ug/g	28	9.4	(1)	---	---	9.4	(1)	NAA
Na	ug/mL	31	---		---	---	---		
Ni	ug/g	< 0.9	< 2		---	---	< 2		NAA
Ni	ug/mL	< 1	---		---	---	---		
S	%	4.504 ± 0.010	4.48 ± 0.02	(3)	4.49	4.46 - 4.49	4.49	(1)	ICPES
S	%	---	---		---	---	4.48	(2)	NM
Sb	ng/g	---	100	(1)	---	---	100	(1)	NAA
Sc	ug/g	---	2	(1)	---	---	2	(1)	NAA
Se	ng/g	---	80	(1)	---	---	80	(1)	NAA
Si	ug/g	12	---		---	---	---		
Si	ug/mL	13	---		---	---	---		
Sm	ug/g	---	9	(1)	---	---	9	(1)	NAA
Sn	ug/g	< 0.9	---		---	---	---		
Sn	ug/mL	< 1	---		---	---	---		
Ti	ug/g	< 0.9	---		---	---	---		
Ti	ug/mL	< 1	---		---	---	---		
V	ng/g	< 900	< 200		---	---	< 200		NAA
V	ug/mL	< 1	---		---	---	---		
Zn	ug/g	21	0.7	(1)	---	---	0.7	(1)	NAA
Zn	ug/mL	23	---		---	---	---		

TABLE 1620A-2: INDIVIDUAL DATA FOR NBS SRM 1620A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
As (ng/g)				
40	10		ITNA	85FIL 02
Br (ng/g)				
600	600		ITNA	85FIL 02
Cl (ug/g)				
11.8	1		ITNA	83LI 01
Co (ng/g)				
80	60		ITNA	85FIL 02
Cr (ng/g)				
200	70		ITNA	85FIL 02
Eu (ng/g)				
10	3		ITNA	85FIL 02
Fe (ug/g)				
11	7		ITNA	85FIL 02
La (ng/g)				
500	300		ITNA	85FIL 02
Na (ug/g)				
9.4	2.9		ITNA	85FIL 02
Ni (ug/g)				
<	2		ITNA	85FIL 02
S (%)				
4.46	0.13	7	NM	83LI 01
4.49	0.03		ICPES	85FAB 01
4.49	0.12	7	NM	83LI 01
Sb (ng/g)				
100	140		ITNA	85FIL 02
Sc (ug/g)				
2	0.6		ITNA	85FIL 02
Se (ng/g)				
80	20		ITNA	85FIL 02
Sm (ug/g)				
9	5		ITNA	85FIL 02
V (ng/g)				
<	200		ITNA	85FIL 02
Zn (ug/g)				
0.7	0.5		ITNA	85FIL 02

TABLE 1621-1: COMPILED DATA FOR NBS SRM 1621 SULFUR IN RESIDUAL FUEL OIL (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	METHOD MEANS Mean (n) Method
S	%	1.05 ± 0.02	1.01 ± 0.05 (5)	1.05	0.9 - 1.06	1.06 (1) XRF
S	%	---	---	---	---	0.99 (1) IC
S	%	---	---	---	---	0.9 (1) MECA
S	%	---	---	---	---	1.05 (1) TITR
S	%	---	---	---	---	1.05 (1) CB

TABLE 1621-2: INDIVIDUAL DATA FOR NBS SRM 1621 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
S (%)				
0.9	0.1		MECA	80MCC 01
0.99	0.03		IC	80MCC 01
1.05	0.01		CB	84LEC 02
1.05	0.03		TITR	80MCC 01
1.06			XRF	80MCC 01

TABLE 1621A-1: COMPILED DATA FOR NBS SRM 1621A SULFUR IN RESIDUAL FUEL OIL (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	METHOD MEANS Mean (n) Method
S	%	0.94 ± 0.01	0.94 ± 0.03 (7)	0.94	0.89 - 0.973	0.9715 (2) XRF
S	%	---	---	---	---	0.935 (2) ICPES
S	%	---	---	---	---	0.89 (1) POL
S	%	---	---	---	---	0.945 (1) TITR
S	%	---	---	---	---	0.931 (1) IC

TABLE 1621A-2: INDIVIDUAL DATA FOR NBS SRM 1621A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
S (%)				
0.89	0.07		POL	81REL 01
0.93	0.02		ICPES	81WAL 02
0.931	0.01		IC	82VIS 01
0.94	0.02		ICPES	84BAR 03
0.945	0.014		TITR	82VIS 01
0.97	0.009	6	EXRF	81CHR 01
0.973	0.008	6	EXRF	81CHR 01

TABLE 1621B-1: COMPILED DATA FOR NBS SRM 1621B SULFUR IN RESIDUAL FUEL OIL (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	METHOD MEANS Mean ± SD (n) Method
Al	ug/g	6.5	---	---	---	---
Al	ug/mL	6	---	---	---	---
B	ug/g	< 1.1	---	---	---	---
B	ug/mL	< 1	---	---	---	---
Ca	ug/g	9.7	---	---	---	---
Ca	ug/mL	9	---	---	---	---
Cr	ug/g	3.2	---	---	---	---
Cr	ug/mL	3	---	---	---	---
Cu	ug/g	< 1.1	---	---	---	---
Cu	ug/mL	< 1	---	---	---	---
Density	g/cm3	0.929	---	---	---	---
Fe	ug/g	< 5.4	---	---	---	---
Fe	ug/mL	< 5	---	---	---	---
Flash Pt.	deg. C	111	---	---	---	---
Mg	ug/g	< 1.1	---	---	---	---
Mg	ug/mL	< 1	---	---	---	---
Mn	ug/g	1.1	---	---	---	---
Mn	ug/mL	1	---	---	---	---
Mo	ug/g	< 1.1	---	---	---	---
Mo	ug/mL	< 1	---	---	---	---
Na	ug/g	8.6	---	---	---	---
Na	ug/mL	8	---	---	---	---
Ni	ug/g	6.5	---	---	---	---
Ni	ug/mL	6	---	---	---	---
S	%	0.95 ± 0.005	0.948 ± 0.014 (7)	0.944	0.935 - 0.975	0.954 ± 0.015 (4) XRF
S	%	---	---	---	---	0.953 (1) ICPES
S	%	---	---	---	---	0.935 (2) COUL
Si	ug/g	6.5	---	---	---	---
Si	ug/mL	6	---	---	---	---
Sn	ug/g	< 1.1	---	---	---	---
Sn	ug/mL	< 1	---	---	---	---
Ti	ug/g	< 1.1	---	---	---	---
Ti	ug/mL	< 1	---	---	---	---
V	ug/g	16	---	---	---	---
V	ug/mL	15	---	---	---	---
Zn	ug/g	16	---	---	---	---
Zn	ug/mL	15	---	---	---	---

TABLE 1621B-2: INDIVIDUAL DATA FOR NBS SRM 1621B (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
S (%)				
0.935			COUL	84TAK 01
0.935			COUL	83TAK 01
0.944			XRF	83TAK 01
0.944			XRF	84TAK 01
0.953	0.003		ICPES	85FAB 01
0.953	0.031	32	EXRF	83SAN 02
0.975	0.031	32	EXRF	83SAN 02

TABLE 1622-1: COMPILED DATA FOR NBS SRM 1622 SULFUR IN RESIDUAL FUEL OIL (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	METHOD MEANS Mean (n) Method
S	%	2.14 ± 0.01	2.16 (2)	---	2.15 - 2.16	2.16 (1) ICPES
S	%	---	---	---	---	2.15 (1) CB

TABLE 1622-2: INDIVIDUAL DATA FOR NBS SRM 1622 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
S (%)				
2.15	0.03		CB	84LEC 02
2.16	0.02		ICPES	85FAB 01

TABLE 1622A-1: COMPILED DATA FOR NBS SRM 1622A SULFUR IN RESIDUAL FUEL OIL (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	METHOD MEANS Mean (n) Method
S	%	1.96 ± 0.04	2.00 ± 0.03 (4)	2.01	1.948 - 2.02	1.98 (2) XRF
S	%	---	---	---	---	2.02 (2) ICPES

TABLE 1622A-2: INDIVIDUAL DATA FOR NBS SRM 1622A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
S (%)				
1.6	0.1		POL	81REL 01
1.948	0.018	6	EXRF	81CHR 01
2.01	0.02		ICPES	84BAR 03
2.011	0.015	6	EXRF	81CHR 01
2.02	0.02		ICPES	81WAL 02

TABLE 1622C-1: COMPILED DATA FOR NBS SRM 1622C SULFUR IN RESIDUAL FUEL OIL (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD
S	%	2.012 ± 0.025

TABLE 1622B-1: COMPILED DATA FOR NBS SRM 1622B SULFUR IN RESIDUAL FUEL OIL (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	METHOD MEANS Mean ± SD (n) Method
Al	ug/g	8.1	---	---	---	---
Al	ug/mL	8	---	---	---	---
B	ug/g	< 1	---	---	---	---
B	ug/mL	< 1	---	---	---	---
Ca	ug/g	24.4	---	---	---	---
Ca	ug/mL	24	---	---	---	---
Cr	ug/g	1	---	---	---	---
Cr	ug/mL	1	---	---	---	---
Cu	ug/g	< 1	---	---	---	---
Cu	ug/mL	< 1	---	---	---	---
Density	g/cm3	0.984	---	---	---	---
Fe	ug/g	< 5.1	---	---	---	---
Fe	ug/mL	< 5	---	---	---	---
Flash Pt.	deg. C	65	---	---	---	---
Mg	ug/g	2	---	---	---	---
Mg	ug/mL	2	---	---	---	---
Mn	ug/g	1	---	---	---	---
Mn	ug/mL	1	---	---	---	---
Mo	ug/g	< 1	---	---	---	---
Mo	ug/mL	< 1	---	---	---	---
Na	ug/g	25.4	---	---	---	---
Na	ug/mL	25	---	---	---	---
Ni	ug/g	15.2	---	---	---	---
Ni	ug/mL	15	---	---	---	---
S	%	1.982 ± 0.018	1.98 ± 0.01 (6)	1.979	1.971 - 2.01	2.00 ± 0.04 (4) XRF
S	%	---	---	---	---	2.01 (1) ICPES
S	%	---	---	---	---	1.98 (2) COUL
Si	ug/g	13.2	---	---	---	---
Si	ug/mL	13	---	---	---	---
Sn	ug/g	< 1	---	---	---	---
Sn	ug/mL	< 1	---	---	---	---
Ti	ug/g	< 1	---	---	---	---
Ti	ug/mL	< 1	---	---	---	---
V	ug/g	51	---	---	---	---
V	ug/mL	50	---	---	---	---
Zn	ug/g	11.2	---	---	---	---
Zn	ug/mL	11	---	---	---	---

TABLE 1622B-2: INDIVIDUAL DATA FOR NBS SRM 1622B (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
S (%)				
1.971	0.031	32	EXRF	83SAN 02
1.977			COUL	83TAK 01
1.977			COUL	84TAK 01
1.979			XRF	84TAK 01
1.979			XRF	83TAK 01
2.01	0.02		ICPES	85FAB 01
2.06	0.07	32	EXRF	83SAN 02

TABLE 1623-1: COMPILED DATA FOR NBS SRM 1623 SULFUR IN RESIDUAL FUEL OIL (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	METHOD MEANS Mean (n) Method
S	ug/g	2680 ± 40	2710 ± 130 (4)	2650	2600 - 2900	2700 (1) XRF
S	ug/g	---	---	---	---	2600 (1) MECA
S	ug/g	---	---	---	---	2900 (1) TITR
S	ug/g	---	---	---	---	2650 (1) IC

TABLE 1623A-1: COMPILED DATA FOR NBS SRM 1623A SULFUR IN RESIDUAL FUEL OIL (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	METHOD MEANS Mean ± SD (n) Method
Al	ug/g	5.4	---	---	---	---
Al	ug/mL	5	---	---	---	---
B	ug/g	< 1.1	---	---	---	---
B	ug/mL	< 1	---	---	---	---
Ca	ug/g	9.8	---	---	---	---
Ca	ug/mL	9	---	---	---	---
Cr	ug/g	1.1	---	---	---	---
Cr	ug/mL	1	---	---	---	---
Cu	ug/g	< 1.1	---	---	---	---
Cu	ug/mL	< 1	---	---	---	---
Density	g/cm3	0.918	---	---	---	---
Fe	ug/g	< 5.4	---	---	---	---
Fe	ug/mL	< 5	---	---	---	---
Flash Pt.	deg. C	140	---	---	---	---
Mg	ug/g	< 1.1	---	---	---	---
Mg	ug/mL	< 1	---	---	---	---
Mn	ug/g	< 1.1	---	---	---	---
Mn	ug/mL	< 1	---	---	---	---
Mo	ug/g	< 1.1	---	---	---	---
Mo	ug/mL	< 1	---	---	---	---
Na	ug/g	9.8	---	---	---	---
Na	ug/mL	9	---	---	---	---
Ni	ug/g	1.1	---	---	---	---
Ni	ug/mL	1	---	---	---	---
S	ug/g	2400 ± 30	2340 ± 50 (6)	2310	2300 - 2400	2370 ± 40 (4) XRF
S	ug/g	---	---	---	---	2300 (2) COUL
Si	ug/g	< 1.1	---	---	---	---
Si	ug/mL	< 1	---	---	---	---
Sn	ug/g	< 1.1	---	---	---	---
Sn	ug/mL	< 1	---	---	---	---
Ti	ug/g	< 1.1	---	---	---	---
Ti	ug/mL	< 1	---	---	---	---
V	ug/g	3.3	---	---	---	---
V	ug/mL	3	---	---	---	---
Zn	ug/g	16.3	---	---	---	---
Zn	ug/mL	15	---	---	---	---

TABLE 1623-2: INDIVIDUAL DATA FOR NBS SRM 1623
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
S (ug/g)				
2600	200		MECA	80MCC 01
2650	40		IC	80MCC 01
2700			XRF	80MCC 01
2900	500		TITR	80MCC 01

TABLE 1623A-2: INDIVIDUAL DATA FOR NBS SRM 1623A
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
S (ug/g)				
2300			COUL	84TAK 01
2300			COUL	83TAK 01
2310	240	32	EXRF	83SAN 02
2380			XRF	84TAK 01
2380			XRF	83TAK 01
2400	50	32	EXRF	83SAN 02

TABLE 1624-1: COMPILED DATA FOR NBS SRM 1624 SULFUR IN DISTILLATE OIL (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	METHOD MEANS Mean (n) Method
S	ug/g	2110 ± 40	2050 ± 120 (4)	2030	1900 - 2200	1900 (1) ICPES
S	ug/g	---	---	---	---	2200 (1) POL
S	ug/g	---	---	---	---	2030 (1) TITR
S	ug/g	---	---	---	---	2080 (1) IC

TABLE 1624A-1: COMPILED DATA FOR NBS SRM 1624A SULFUR IN DISTILLATE OIL (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	METHOD MEANS Mean ± SD (n) Method
Al	ug/g	1.2	---	---	---	---
Al	ug/mL	1	---	---	---	---
B	ug/g	< 1.2	---	---	---	---
B	ug/mL	< 1	---	---	---	---
Ca	ug/g	8.2	---	---	---	---
Ca	ug/mL	7	---	---	---	---
Cr	ug/g	< 1.2	---	---	---	---
Cr	ug/mL	< 1	---	---	---	---
Cu	ug/g	< 1.2	---	---	---	---
Cu	ug/mL	< 1	---	---	---	---
Density	g/cm3	0.848	---	---	---	---
Fe	ug/g	< 5.9	---	---	---	---
Fe	ug/mL	< 5	---	---	---	---
Mg	ug/g	< 1.2	---	---	---	---
Mg	ug/mL	< 1	---	---	---	---
Mn	ug/g	< 1.2	---	---	---	---
Mn	ug/mL	< 1	---	---	---	---
Mo	ug/g	< 1.2	---	---	---	---
Mo	ug/mL	< 1	---	---	---	---
Na	ug/g	< 1.2	---	---	---	---
Na	ug/mL	< 1	---	---	---	---
Ni	ug/g	< 1.2	---	---	---	---
Ni	ug/mL	< 1	---	---	---	---
S	ug/g	1410 ± 20	1420 ± 20 (5)	1420	1400 - 1450	1440 ± 20 (3) XRF
S	ug/g	---	---	---	---	1400 (2) COUL
Si	ug/g	< 1.2	---	---	---	---
Si	ug/mL	< 1	---	---	---	---
Sn	ug/g	< 1.2	---	---	---	---
Sn	ug/mL	< 1	---	---	---	---
Ti	ug/g	< 1.2	---	---	---	---
Ti	ug/mL	< 1	---	---	---	---
V	ug/g	< 1.2	---	---	---	---
V	ug/mL	< 1	---	---	---	---
Zn	ug/g	< 1.2	---	---	---	---
Zn	ug/mL	< 1	---	---	---	---

TABLE 1624-2: INDIVIDUAL DATA FOR NBS SRM 1624
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
S (ug/g)				
1900	100		ICPES	81WAL 02
2030	50		TITR	82VIS 01
2080	210		IC	82VIS 01
2200	200		POL	81REL 01

TABLE 1624A-2: INDIVIDUAL DATA FOR NBS SRM 1624A
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
S (ug/g)				
1400			COUL	84TAK 01
1400			COUL	83TAK 01
1420	90	32	EXRF	83SAN 02
1450			XRF	83TAK 01
1450			XRF	84TAK 01
1540	280	32	EXRF	83SAN 02

TABLE 1630-1: COMPILED DATA FOR NBS SRM 1630 MERCURY IN COAL (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	METHOD MEANS		
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Method
ASH	%	---	2.2	(1)	---	---	2.2	(1)	CB
Al	ug/g	---	5300	(1)	---	---	---		
As	ug/g	---	19	(1)	---	---	---		
B	ug/g	---	5	(1)	---	---	---		
Be	ug/g	---	1	(1)	---	---	---		
Br	ug/g	---	33	(2)	---	29 - 37	37	(1)	NAA
Ca	ug/g	---	700	(1)	---	---	---		
Cd	ng/g	---	< 200		---	---	---		
Cl	ug/g	---	1725	(2)	---	1230 - 2220	1230	(1)	IC
Co	ug/g	---	4.8	(2)	---	3.6 - 6	3.6	(1)	NAA
Cr	ug/g	---	7.55	(2)	---	7.1 - 8	7.1	(1)	NAA
Cu	ug/g	---	16	(1)	---	---	---		
F	ug/g	---	25	(1)	---	---	---		
Fe	%	---	0.77	(2)	---	0.51 - 1.04	0.51	(1)	NAA
Ga	ug/g	---	1.08	(2)	---	1.07 - 1.1	1.07	(1)	NAA
Ge	ug/g	---	1	(1)	---	---	---		
H2O-	%	---	0.4	(1)	---	---	0.4	(1)	GRAV
Hg	ng/g	130 ± 10	126 ± 13	(20)	127	104 - 150	122 ± 13	(9)	NAA
Hg	ng/g	---	---		---	---	135	(1)	OES
Hg	ng/g	---	---		---	---	118	(1)	FAE
Hg	ng/g	---	---		---	---	130 ± 14	(8)	AA
K	ug/g	---	800	(1)	---	---	---		
La	ug/g	---	4.4	(1)	---	---	4.4	(1)	NAA
Mg	ug/g	---	200	(1)	---	---	---		
Mn	ug/g	---	6	(1)	---	---	---		
Mo	ug/g	---	2	(1)	---	---	---		
Na	ug/g	---	405	(2)	---	320 - 490	490	(1)	NAA
Ni	ug/g	---	10	(1)	---	---	---		
P	ug/g	---	17	(1)	---	---	---		
Pb	ug/g	---	4	(1)	---	---	---		
S	%	---	1.14 ± 0.20	(3)	1.07	0.99 - 1.37	1.37	(1)	XRF
S	%	---	---		---	---	0.99	(1)	IC
S	%	---	---		---	---	1.07	(1)	CB
Sb	ug/g	---	1.15	(2)	---	0.6 - 1.7	1.7	(1)	NAA
Sc	ug/g	---	1.4	(1)	---	---	1.4	(1)	NAA
Se	ug/g	2.1	2.2 ± 0.2	(6)	2.11	2.0 - 2.6	2.23 ± 0.25	(4)	NAA
Se	ug/g	---	---		---	---	2.12	(1)	ICPES
Si	ug/g	---	7200	(1)	---	---	---		
Sn	ug/g	---	6	(1)	---	---	---		
Ti	ug/g	---	500	(1)	---	---	---		
V	ug/g	---	24	(1)	---	---	---		
Zn	ug/g	---	6	(1)	---	---	---		
Zr	ug/g	---	21	(1)	---	---	---		

TABLE 1630-2: INDIVIDUAL DATA FOR NBS SRM 1630 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (ug/g)				
5300			VV	77GLU 01
As (ug/g)				
19			VV	77GLU 01
ASH (%)				
2.2			CB	77GLU 01
B (ug/g)				
5			VV	77GLU 01
Be (ug/g)				
1			VV	77GLU 01
Br (ug/g)				
29			VV	77GLU 01
37			ITNA	74TAM 01
Ca (ug/g)				
700			VV	77GLU 01
Cd (ug/g)				
<	0.2	L	VV	77GLU 01
Cl (ug/g)				
1230	40		IC	85GEN 01
2220			VV	77GLU 01
Co (ug/g)				
3.6	0.18		ITNA	74TAM 01
6			VV	77GLU 01
Cr (ug/g)				
7.1	0.35		ITNA	74TAM 01
8			VV	77GLU 01
Cu (ug/g)				
16			VV	77GLU 01
F (ug/g)				
25			VV	77GLU 01
Fe (%)				
0.51	0.0204		ITNA	74TAM 01
1.04			VV	77GLU 01
Ga (ug/g)				
1.07	0.04		RTNA	72SAN 01
1.1			VV	77GLU 01
Ge (ug/g)				
1			VV	77GLU 01
H2O- (%)				
0.4			GRAV	77GLU 01
Hg (ng/g)				
104	6		CVAA	80NAD 01
105			RTNA	74RIC 01
105	30		RTNA	72LYO 01
106			ITNA	74RIC 01
118	11		FAE	76CAV 01
120	10		CVAA	73LO 01
124	11		CVAA	82DOO 01
125	10		CVAA	75WIM 01
127	5		RTNA	74ORV 01
127	6		RTNA	72RAI 01
127	12		RTNA	72ROO 01
130	10		RTNA	75LIT 01
130	10		ITNA	74TAM 01
135			OES	75PEC 01
136	7		FAA	82UCH 02
139	7		CVAA	72RAI 01
139	12		FAA	72ROO 01
140			RTNA	75FRO 01
140			VV	77GLU 01
150			CVAA	75MUR 01
486	60		ITNA	75LIT 01
K (ug/g)				
800			VV	77GLU 01
La (ug/g)				
4.4			ITNA	74TAM 01

TABLE 1630-2: INDIVIDUAL DATA FOR NBS SRM 1630 (cont.)

Conc	Uncer	Com	Method	Reference
Mg (ug/g)				
200			VV	77GLU 01
Mn (ug/g)				
6			VV	77GLU 01
Mo (ug/g)				
2			VV	77GLU 01
Na (ug/g)				
320			VV	77GLU 01
490			ITNA	74TAM 01
Ni (ug/g)				
10			VV	77GLU 01
P (ug/g)				
17			VV	77GLU 01
Pb (ug/g)				
4			VV	77GLU 01
S (%)				
0.99	0.05		IC	85GEN 01
1.07			CB	77GLU 01
1.37			XRF	77GLU 01

Conc	Uncer	Com	Method	Reference
Sb (ug/g)				
0.6			VV	77GLU 01
1.7	0.51		ITNA	74TAM 01
Sc (ug/g)				
1.4	0.06		ITNA	74TAM 01
Se (ug/g)				
2			VV	77GLU 01
2.09	0.06		RTNA	74ORV 01
2.11	0.09		RTNA	72ROO 03
2.11	0.09		RTNA	77ROO 02
2.12	0.09		ICPES	80HAA 01
2.6	0.21		ITNA	74TAM 01
Si (ug/g)				
7200			VV	77GLU 01
Sn (ug/g)				
6			VV	77GLU 01
Ti (ug/g)				
500			VV	77GLU 01
V (ug/g)				
24			VV	77GLU 01
Zn (ug/g)				
6			VV	77GLU 01
Zr (ug/g)				
21			VV	77GLU 01

TABLE 1631A-1: COMPILED DATA FOR NBS SRM 1631A SULFUR IN COAL
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	METHOD MEANS Mean ± SD (n) Method
ASH	%	5.00 ± 0.02	---	---	---	---
H2O	%	0.84	---	---	---	---
Hg	ng/g	73	---	---	---	---
Pb	ug/g	5.44	---	---	---	---
S	ug/g	5460 ± 30	5570 ± 250 (8)	5460	5260 - 5990	5900 (1) TCGS
S	ug/g	---	---	---	---	5375 (2) TITR
S	ug/g	---	---	---	---	5460 (1) IC
S	ug/g	---	---	---	---	5610 ± 260 (4) CB

TABLE 1631B-1: COMPILED DATA FOR NBS SRM 1631B SULFUR IN COAL
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	METHOD MEANS Mean ± SD (n) Method
ASH	%	14.59 ± 0.09	---	---	---	---
H2O	%	0.69	---	---	---	---
Hg	ng/g	41	---	---	---	---
Pb	ug/g	5.97	---	---	---	---
S	%	2.016 ± 0.014	2.01 ± 0.08 (6)	1.97	1.92 - 2.14	2.02 (1) TCGS
S	%	---	---	---	---	1.98 (2) TITR
S	%	---	---	---	---	1.97 (1) IC
S	%	---	---	---	---	2.045 (2) CB

TABLE 1631C-1: COMPILED DATA FOR NBS SRM 1631C SULFUR IN COAL
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	METHOD MEANS Mean ± SD (n) Method
ASH	%	6.17 ± 0.02	---	---	---	---
H2O	%	0.47	---	---	---	---
S	%	3.02 ± 0.008	3.03 ± 0.06 (7)	3.00	2.97 - 3.117	2.98 (1) TCGS
S	%	---	---	---	---	3.05 (2) TITR
S	%	---	---	---	---	3.09 (1) IC
S	%	---	---	---	---	3.00 ± 0.04 (3) CB

TABLE 1631A-2: INDIVIDUAL DATA FOR NBS SRM 1631A
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
S (ug/g)				
5260	350		TITR	80ARO 01
5420	60		CB	86GAU 01
5450	80		CB	84LEC 02
5460			IC	77SMI 05
5490			TITR	74HIC 01
5590	50		CB	84GLA 11
5900	400		TCGS	77JUR 01
5990	20		CB	85GLA 03

TABLE 1631B-2: INDIVIDUAL DATA FOR NBS SRM 1631B
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
S (%)				
1.92			TITR	74HIC 01
1.95	0.07		CB	85GLA 03
1.97			IC	77SMI 05
2.02	0.05		TCGS	77JUR 01
2.042	0.067		TITR	80ARO 01
2.14	0.09		CB	86GAU 01

TABLE 1631C-2: INDIVIDUAL DATA FOR NBS SRM 1631C
(revised 3/1/86)

Conc	Uncer	Com	Method	Reference
S (%)				
2.97			CB	82ANO 01
2.98	0.02		TCGS	77JUR 01
2.99			TITR	74HIC 01
3	0.05		CB	85GLA 03
3.04	0.03		CB	86GAU 01
3.09			IC	77SMI 05
3.117	0.097		TITR	80ARO 01

TABLE 1632-1: COMPILED DATA FOR NBS SRM 1632 TRACE ELEMENTS IN COAL (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		XRF		OTHER METHODS					
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method	Mean	(n)	Method
ASH	%	---	12.7	(2)	---	12.17 - 13.2	---		---		---		---		12.68	(2)	CB	---		
Ag	ng/g	< 100	63 ± 13	(5)	60	45 - 80	80	(1)	55 ± 9	(3)	---		---		70	(1)	SSMS	---		
Al	%	---	1.73 ± 0.10	(32)	1.72	1.57 - 1.9	1.71	(2)	1.74 ± 0.10	(21)	1.70 ± 0.09	(8)	---		1.68	(1)	TCGS	---		
As	ug/g	5.9 ± 0.6	5.8 ± 0.5	(52)	5.8	4.61 - 7	5.64 ± 0.06	(5)	5.9 ± 0.4	(29)	5.9	(2)	5.8 ± 1.0	(3)	6.0 ± 0.3	(6)	PAA	5	(1)	OES
As	ug/g	---	---		---	---	---		---		---		---		---			6.1	(1)	GCMES
As	ug/g	---	---		---	---	---		---		---		---		5.4	(1)	COLOR	5.55	(2)	FAE
Au	ng/g	---	0.92	(2)	---	0.85 - 0.99	---		0.92	(2)	---		---		---			---		
B	ug/g	---	41 ± 8	(7)	43	29 - 47.7	---		---		29	(1)	---		46.1 ± 2.7	(4)	TCGS	30	(1)	OES
Ba	ug/g	---	326 ± 32	(33)	314	256 - 390	---		332 ± 31	(27)	240 ± 70	(5)	301	(1)	314	(2)	PAA	---		
Be	ug/g	1.5	1.62 ± 0.10	(13)	1.63	1.49 - 1.85	1.60 ± 0.08	(9)	1.7	(1)	1.77 ± 0.08	(3)	---		1.2	(1)	OES	1.49	(1)	FLUOR
Bi	ug/g	---	1.05	(1)	---	---	---		---		---		---		1.05	(1)	PAA	---		
Br	ug/g	---	17.7 ± 1.7	(32)	18	14 - 20	---		17.6 ± 1.8	(28)	---		19.0 ± 2.7	(5)	---			---		
C	%	---	70.6 ± 1.7	(5)	70	68.93 - 73	---		---		---		---		70.1 ± 1.4	(3)	CB	71.5	(2)	TCGS
Ca	ug/g	---	4180 ± 420	(30)	4200	3300 - 5100	4950	(1)	4040 ± 320	(14)	4150 ± 230	(7)	4310	(2)	4450	(2)	PAA	5100	(1)	OES
Ca	ug/g	---	---		---	---	---		---						---			2840	(1)	GAMMA
Ca	ug/g	---	---		---	---	---		---		---		---		3300	(1)	TCGS	4030	(1)	14NAA
Cd	ng/g	190 ± 30	209 ± 26	(26)	200	170 - 250	222 ± 26	(10)	220 ± 17	(3)	---		---		205 ± 23	(6)	PAA	310	(1)	IDMS
Cd	ng/g	---	---		---	---	---		---		---		---		190	(1)	POL	190	(2)	TCGS
Cd	ng/g	---	---		---	---	---		---		---		---		200	(2)	SSMS	180	(2)	AF
Ce	ug/g	---	20.7 ± 1.9	(26)	20.4	17.34 - 26	---		20.4 ± 1.8	(22)	22.8	(1)	24	(1)	20	(1)	PAA	26.5	(2)	OES
Cl	ug/g	---	876 ± 64	(31)	880	750 - 1000	---		874 ± 71	(22)	---		810	(2)	910	(2)	PAA	882	(2)	IC
Cl	ug/g	---	---		---	---	---		---		---		---		895	(1)	TCGS	922	(2)	ISE
Co	ug/g	6	5.6 ± 0.6	(43)	5.7	3.9 - 7	6.1 ± 0.8	(3)	5.8 ± 0.5	(30)	5.0 ± 0.8	(6)	6.75	(2)	5.55	(2)	PAA	4.7	(1)	OES
Cr	ug/g	20.2 ± 0.5	19.6 ± 1.5	(47)	19.6	16 - 23	19.7 ± 0.4	(8)	19.7 ± 1.3	(28)	17 ± 2	(6)	20	(2)	20.6	(2)	PAA	16	(1)	OES
Cr	ug/g	---	---		---	---	---		---		---		---		---			19	(1)	SSMS
Cs	ug/g	---	1.50 ± 0.18	(24)	1.46	1.3 - 2.3	---		1.52 ± 0.18	(22)	---		1.4	(1)	1.3	(1)	PAA	---		
Cu	ug/g	18 ± 2	17.4 ± 2.2	(33)	17.4	13 - 23	18.2 ± 1.6	(9)	15.8 ± 1.5	(6)	17.6 ± 1.4	(6)	18 ± 4	(8)	16.7 ± 1.7	(3)	SSMS	24	(1)	PAA
Cu	ug/g	---	---		---	---	---		---		---		---		---			17	(1)	OES
Dy	ug/g	---	1.23 ± 0.2	(12)	1.2	0.85 - 1.59	1.3	(1)	1.2 ± 0.2	(11)	---		---		---			---		
Er	ug/g	---	5	(2)	---	0.7 - 9.3	0.7	(1)	9.3	(1)	---		---		---			---		
Eu	ng/g	---	360 ± 40	(26)	350	280 - 420	400	(1)	350 ± 40	(23)	420	(1)	---		410	(1)	OES	---		
F	ug/g	---	80 ± 10	(8)	80	65 - 91	---		---		---		---		81 ± 11	(6)	ISE	71	(1)	IC

TABLE 1632-1: COMPILED DATA FOR NBS SRM 1632 TRACE ELEMENTS IN COAL (cont.)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		XRF		OTHER METHODS					
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method	Mean	(n)	Method
Fe	ug/g	8700 ± 300	8510 ± 440	(47)	8440	7517 - 9300	8700 ± 370	(4)	8560 ± 470	(27)	8300 ± 400	(8)	7900 ± 700	(6)	8695	(2)	PAA	8600	(1)	POL
Fe	ug/g	---	---		---	---	---		---		---		---		8420	(1)	TCGS	---		
Ga	ug/g	---	5.9 ± 1.1	(18)	5.8	4.5 - 8.5	---		5.5 ± 0.8	(13)	---		7.1 ± 1.3	(4)	6.2	(1)	OES	---		
Gd	ug/g	---	2.5 ± 0.9	(10)	2.5	1.2 - 3.62	1.2	(1)	3.2 ± 0.5	(5)	1.2	(1)	3	(1)	1.82	(2)	TCGS	---		
Ge	ug/g	---	2.6 ± 0.4	(6)	2.7	2 - 3	---		2	(1)	2.3	(1)	3.6 ± 1.2	(3)	2.7	(1)	OES	---		
H	%	---	4.29 ± 0.22	(4)	4.28	4.02 - 4.57	---		---		---		---		4.42	(2)	CB	4.16	(2)	TCGS
H2O-	%	---	2.6	(1)	---	---	---		---		---		---		2.6	(1)	FD	---		
Hf	ug/g	---	0.98 ± 0.10	(21)	0.96	0.81 - 1.15	---		0.98 ± 0.10	(21)	---		---		---			---		
Hg	ng/g	120 ± 20	118 ± 24	(22)	117	70 - 180	118 ± 14	(8)	150 ± 50	(13)	---		---		100	(3)	PAA	---		
Ho	ng/g	---	252 ± 13	(5)	250	240 - 270	250	(1)	252 ± 15	(4)	---		---		---			---		
I	ug/g	---	3.2 ± 0.4	(12)	3.3	2.68 - 4	---		3.4 ± 1.1	(10)	---		3	(1)	3.3	(2)	PAA	---		
In	ng/g	---	35 ± 21	(7)	30	16.9 - 70	---		35 ± 21	(7)	---		---		---			---		
Ir	ng/g	---	2.8 ± 0.6	(3)	2.5	2.48 - 3.53	---		2.8 ± 0.6	(3)	---		---		---			---		
K	ug/g	---	2780 ± 170	(39)	2800	2410 - 3100	2570	(1)	2830 ± 130	(25)	2675 ± 190	(8)	2410	(1)	2700	(1)	PAA	3100	(1)	OES
K	ug/g	---	---		---	---	---		---		---		---		2750	(1)	TCGS	2840	(1)	GAMMA
La	ug/g	---	10.6 ± 0.7	(31)	10.6	9.1 - 11.5	10	(1)	10.6 ± 0.6	(26)	10.35	(2)	10	(1)	11	(1)	OES	---		
Li	ug/g	---	25.9 ± 2.5	(3)	25	24 - 28.7	25	(1)	---		28.7	(1)	---		24	(1)	OES	---		
Lu	ng/g	---	129 ± 16	(15)	130	100 - 150	100	(1)	134 ± 12	(13)	---		---		---			---		
Mg	ug/g	---	1560 ± 410	(26)	1600	980 - 2480	---		1760 ± 490	(16)	1260 ± 180	(8)	---		1600	(2)	PAA	1600	(1)	OES
Mn	ug/g	40 ± 3	41.1 ± 2.6	(50)	41.1	36 - 46	40 ± 3	(7)	41.8 ± 2.2	(29)	41.8 ± 2.9	(6)	37.8 ± 1.1	(5)	45.0	(2)	PAA	36	(1)	OES
Mn	ug/g	---	---		---	---	---		---		---		---		---			43.5	(1)	TCGS
Mo	ug/g	---	3.8 ± 0.8	(10)	3.4	3.08 - 5	---		3.8 ± 0.9	(6)	4	(2)	4	(1)	0.26 ± 0.05	(5)	PAA	3.6	(1)	OES
N	%	---	1.20 ± 0.14	(4)	1.2	1.01 - 1.3	---		---		---		---		1.3	(1)	CB	1.25	(2)	TCGS
N	%	---	---		---	---	---		---		---		---		1.01	(1)	IC	---		
Na	ug/g	---	379 ± 29	(39)	380	325 - 439	480	(1)	384 ± 24	(27)	374 ± 41	(8)	390	(1)	350	(2)	PAA	---		
Nb	ug/g	---	5	(1)	---	---	---		---		---		5	(1)	---			---		
Nd	ug/g	---	9.0 ± 1.6	(9)	9.5	6.4 - 11.3	8	(1)	9.1 ± 1.6	(5)	9.5	(1)	7	(1)	11.3	(1)	TCGS	---		
Ni	ug/g	15 ± 1	15 ± 2	(41)	14.8	11 - 19	14.6 ± 1.5	(6)	16 ± 3	(15)	15.2 ± 2.5	(6)	14.2 ± 2.4	(6)	13.9 ± 0.2	(5)	PAA	---		
Ni	ug/g	---	---		---	---	---		---		---		---		14.73 ± 0.06	(3)	IDMS	15	(1)	OES
Ni	ug/g	---	---		---	---	---		---		---		---		15.2	(2)	SSMS	14.8	(1)	POL
O	%	---	12.6	(2)	---	10.08 - 15.05	---		---		---		---		15.05	(1)	14NAA	10.08	(1)	CALC
Os	ug/g	---	< 1		---	---	---		< 1		---		---		---			---		

TABLE 1632-1: COMPILED DATA FOR NBS SRM 1632 TRACE ELEMENTS IN COAL (cont.)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		XRF		OTHER METHODS					
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method	Mean	(n)	Method
P	ug/g	---	140 ± 40	(10)	137	92 - 250	---		---		125 ± 24	(7)	138	(1)	260	(2)	COLOR	---		
Pb	ug/g	30 ± 9	28 ± 4	(34)	28	19.1 - 36	29 ± 3	(11)	---		24 ± 8	(6)	24 ± 8	(5)	30 ± 2	(7)	PAA	28.7	(2)	IDMS
Pb	ug/g	---	---		---	---	---		---		---		---		30 ± 3	(3)	SSMS	28.4	(1)	POL
Pd	ng/g	---	< 5		---	---	---		< 5		---		---		---			---		
Pr	ug/g	---	3.8 ± 1.3	(4)	3.6	2 - 4.9	---		4.4 ± 0.7	(3)	---		2	(1)	---			---		
Pt	ng/g	---	228	(2)	---	186 - 270	---		228	(2)	---		---		---			---		
Rb	ug/g	---	20.5 ± 2.2	(30)	20	16.3 - 24.7	---		20.5 ± 2.3	(23)	---		20 ± 3	(4)	20	(2)	PAA	22	(1)	OES
Rh	ug/g	---	< 5		---	---	---		---		---		---		< 5			---		
Ru	ng/g	---	18	(1)	---	---	---		18	(1)	---		---		---			---		
S	%	---	1.32 ± 0.08	(11)	1.32	1.22 - 1.52	---		---		0.9	(1)	1.35 ± 0.12	(4)	1.30	(2)	TCGS	---		
S	%	---	---		---	---	---		---		---		---		1.22 ± 0.21	(4)	CB	1.26	(2)	IC
Sb	ug/g	---	3.4 ± 0.6	(37)	3.4	2.2 - 4.45	3.3 ± 1.3	(3)	3.4 ± 0.5	(29)	---		3	(1)	3.6 ± 0.5	(3)	PAA	2.3	(1)	COLOR
Sc	ug/g	---	3.8 ± 0.2	(30)	3.8	3.4 - 4.2	---		3.8 ± 0.2	(24)	3.8	(2)	4.1	(1)	3.59	(2)	PAA	3.6	(1)	OES
Se	ug/g	2.9 ± 0.3	3.0 ± 0.4	(50)	3	2.3 - 3.9	2.3	(2)	3.1 ± 0.4	(32)	2.9	(1)	3.02 ± 0.10	(4)	3.01 ± 0.01	(5)	PAA	3	(1)	OES
Se	ug/g	---	---		---	---	---		---		---		---		---			2.86	(1)	DCPES
Se	ug/g	---	---		---	---	---		---		---		---		3.05	(1)	ASV	2.86	(2)	GCMES
Se	ug/g	---	---		---	---	---		---		---		---		2.75	(2)	SSMS	4.7	(1)	COLOR
Si	%	3.2	3.08 ± 0.24	(12)	3.14	2.6 - 3.5	2.9	(2)	3.12	(1)	3.08 ± 0.22	(5)	3.19	(1)	3.00	(1)	PAA	3.5	(1)	14NAA
Si	%	---	---		---	---	---		---		---		---		---			2.95	(1)	TCGS
Sm	ug/g	---	1.6 ± 0.2	(26)	1.66	1.3 - 1.93	1.4	(1)	1.64 ± 0.18	(23)	1.3	(1)	---		1.53	(1)	TCGS	---		
Sn	ug/g	---	9.3 ± 1.8	(9)	10	5 - 11	---		10	(1)	7.2 ± 2.9	(3)	5	(1)	10.2 ± 0.4	(5)	PAA	---		
Sr	ug/g	---	150 ± 20	(34)	150	99 - 190	99	(1)	146 ± 28	(26)	139 ± 3	(3)	146 ± 10	(6)	140	(1)	PAA	---		
Ta	ng/g	---	250 ± 40	(18)	240	170 - 350	---		250 ± 40	(18)	---		---		---			---		
Tb	ng/g	---	280 ± 70	(12)	260	200 - 400	---		280 ± 70	(12)	---		---		---			---		
Te	ng/g	< 100	710 ± 280	(3)	600	500 - 1020	500	(1)	600	(1)	---		---		1020	(1)	PAA	---		
Th	ug/g	3	3.16 ± 0.23	(24)	3.2	2.7 - 3.65	---		3.16 ± 0.21	(20)	---		2.85	(2)	3.45	(2)	GAMMA	---		
Ti	ug/g	800	940 ± 120	(39)	946	680 - 1200	840 ± 170	(3)	990 ± 115	(19)	920 ± 60	(7)	1000 ± 240	(5)	920 ± 45	(3)	PAA	900	(1)	OES
Ti	ug/g	---	---		---	---	---		---		---		---		890	(1)	TCGS	790	(1)	POL
Tl	ng/g	590 ± 30	550 ± 50	(8)	520	500 - 610	---		---		---		---		530 ± 40	(5)	PAA	600 ± 10	(3)	SSMS
Tm	ng/g	---	300 ± 1	(4)	300	300 - 300	---		300 ± 1	(4)	---		---		---			---		
U	ug/g	1.4 ± 0.1	1.37 ± 0.13	(32)	1.4	1.1 - 1.6	---		1.37 ± 0.14	(23)	---		2	(1)	1.42 ± 0.13	(5)	PAA	1.2	(2)	IDMS
U	ug/g	---	---		---	---	---		---		---		---		---			1.41	(2)	GAMMA
V	ug/g	35 ± 3	34 ± 2	(41)	34	30 - 40	35 ± 2	(7)	34.5 ± 2.2	(23)	33.8 ± 2.3	(6)	35	(2)	34	(2)	PAA	32	(1)	OES
W	ng/g	---	740 ± 65	(11)	740	630 - 870	---		740 ± 60	(11)	---		---		---			---		
Y	ug/g	---	7.5 ± 0.6	(8)	7.4	6.6 - 8.3	7	(1)	---		7.45	(2)	7.4 ± 0.4	(3)	7.8	(2)	OES	---		
Yb	ng/g	---	790 ± 130	(23)	790	550 - 1030	700	(1)	800 ± 130	(20)	670	(1)	---		910	(1)	OES	---		
Zn	ug/g	37 ± 4	37 ± 3	(52)	37	30 - 45	37.3 ± 1.8	(9)	36 ± 3	(20)	38.8 ± 1.6	(5)	35.8 ± 2.3	(8)	37.6 ± 1.2	(6)	PAA	45	(1)	OES
Zn	ug/g	---	---		---	---	---		---		---		---		35	(2)	SSMS	38.1	(1)	AF
Zr	ug/g	---	34 ± 10	(10)	33	16 - 46	46	(1)	38 ± 7	(4)	25	(1)	36	(2)	16	(1)	PAA	25	(1)	OES

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ag (ng/g)				
< 100			ITNA	75RUC 01
< 140		L	ITNA	77MAE 01
< 150		L	OES	76WEW 01
< 200		L	ITNA	77CAH 01
< 200		L	ICPES	81CHU 01
< 220		L	ITNA	82SUZ 02
< 400		L	PAA	76CHA 01
45	5		RTNA	77NAD 02
60	30		ITNA	75OND 01
60	30		ITNA	73ABE 01
70	34		SSMS	77PAU 01
80			AA	76WEW 01
1050	100		PAA	74CHA 01
Al (%)				
1.51	0.08		NAA	76HAN 01
1.57		4	AA	79REI 01
1.57	0.155		ITNA	73SHE 01
1.59	0.2		ITNA	76RAG 01
1.6			ICPES	80NAD 01
1.6	0.2	35	ITNA	81GLA 03
1.62	0.13		ITNA	78MAC 01
1.64			ICPES	80NAD 01
1.66			ICPES	80NAD 01
1.66	0.08		ICPES	84NAD 01
1.67	0.01	11	ICPES	85HAR 01
1.68	0.01		ITNA	83NDI 01
1.68	0.04	D	TCGS	80AND 01
1.68	0.04		TCGS	79FAI 01
1.69		11	ICPES	85HAR 01
1.71	0.05		ITNA	77MAE 01
1.71	0.07		ITNA	78LAU 02
1.72	0.09		ITNA	75RIC 01
1.73	0.04		ITNA	76BLO 01
1.74	0.04		ITNA	77ROW 03
1.74	0.04	D	NAA	79STE 01
1.74	0.4		ITNA	76STE 05
1.76	0.31		ITNA	78NAD 02
1.76	0.31		ITNA	75NAD 02
1.78	0.08		ITNA	73ABE 01
1.8			ITNA	84CLE 01
1.8	0.18		ITNA	76WEW 01
1.82	0.06		ICPES	81CHU 01
1.85			ITNA	78WEA 01
1.85	0.08		ITNA	79GRE 01
1.85	0.13		ITNA	75OND 01
1.85	0.13		FAA	77PIL 01
1.86			ICPES	80NAD 01
1.9			ITNA	75KLE 01
1.9	0.19		ITNA	81WAN 01

Conc	Uncer	Com	Method	Reference
Al (%) cont.				
1.98	0.1		XRF	79PRA 01
2.1	1.05		OES	76WEW 01
2.21			ITNA	77GLU 01
3	0.1		ITNA	82SUZ 02
As (ug/g)				
3	2		EXRF	73SPA 01
4.5	0.4		ITNA	75RIC 01
4.6	0.3		ITNA	78NAD 02
4.61	0.32		ITNA	75NAD 02
4.7	0.5		ITNA	78MAC 01
4.7	1		EXRF	79GIA 01
5	0.6	H	OES	80CLA 01
5.1	0.5		ITNA	76KUC 01
5.31			ICPES	81NAD 01
5.4	0.1		IENA	78WAN 01
5.4	0.3		FAE	80DSI 01
5.4	0.5		COLOR	77ARU 01
5.5			ITNA	75KLE 01
5.58	0.73		FAA	82BEN 01
5.6			FAA	78GUI 01
5.6	0.2		ITNA	77ARU 01
5.6	0.36		FAA	77ARU 01
5.7			ITNA	77GLU 01
5.7			FAA	75POL 01
5.7			ITNA	78WEA 01
5.7	0.13		RTNA	75RUC 01
5.7	0.2	H	FAE	79FEL 01
5.7	0.2		FAA	78HAY 01
5.7	0.5		ITNA	79FRU 01
5.7	0.5		ITNA	73ABE 01
5.75	0.37		PAA	74CHA 01
5.8	0.3		PAA	76CHA 01
5.8	0.3		ITNA	76RAG 01
5.8	0.3		ITNA	77MAE 01
5.8	0.3		PAA	77JER 01
5.8	0.4		RTNA	74ORV 01
5.8	0.5		ITNA	76BLO 01
5.9	0.3		ITNA	79GRE 01
5.9	0.4		ITNA	81WAN 01
5.9	0.5		ITNA	73SHE 01
6.0	0.3		ITNA	78LAU 02
6.1	0.3		GCMES	75TAL 01
6.1	0.4		ITNA	77ROW 04
6.1	0.5		XRF	79FRU 01
6.1	0.55		ITNA	77JER 01
6.1	1.4		ITNA	75OND 01
6.2	0.8	6	PAA	82SEG 01
6.2	1.3		ITNA	77CAH 01
6.27	0.89		RTNA	77JER 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference
As (ug/g) cont.				
6.3	0.2		IENA	77ROW 04
6.3	0.2	D	NAA	79STE 01
6.3	0.3		ITNA	85FIL 01
6.3	1	6	PAA	82SEG 01
6.3	1		PAA	80SEG 01
6.4	0.2		IENA	77ROW 03
6.5	0.3		NAA	76HAN 01
6.5	0.5		ICPES	80HAA 01
6.5	1.2		IENA	76STE 05
6.5	1.4	D	NAA	74OND 01
6.6		34	WXRF	82MIL 01
6.6	1.3		ITNA	76WEW 01
7			AA	76WEW 01
8	2		PAA	75OND 01
8.9	0.2		ITNA	82SUZ 02
8.9	0.5		ITNA	75RUC 01
ASH (%)				
12.17			CB	79PRA 01
13.2		34	CB	82MIL 01
Au (ng/g)				
< 1		L	ITNA	77CAH 01
< 20			ITNA	75RUC 01
< 30		L	ITNA	73ABE 01
< 300		L	ICPES	81CHU 01
0.85	0.03		RTNA	77NAD 02
0.99	0.16		RTNA	77NAD 01
146	48		ITNA	73SHE 01
200			ITNA	78WEA 01
B (ug/g)				
29			ICPES	81NAD 01
30	1.1		OES	76WEW 01
42.1	0.7		TCGS	79FAI 01
42.1	0.7	D	TCGS	80AND 01
43			VV	77GLU 01
47	1.6	6	TCGS	76GLA 01
47.7	1.6	6	TCGS	76GLA 01
47.7	1.8	6	TCGS	76GLA 01
118			ITNA	77GLU 01

Conc	Uncer	Com	Method	Reference
Ba (ug/g)				
87	5	9	ITNA	82SUZ 02
104	5	9	ITNA	82SUZ 02
152	37		ICPES	84NAD 01
183			ICPES	80NAD 01
256			ICPES	80NAD 01
274	31		ITNA	76STE 05
280			ITNA	75MIL 01
300	60		ITNA	78LAU 02
301		34	WXRF	82MIL 01
302	8		ITNA	76RAG 01
306	20		IENA	77ROW 04
306	20	D	NAA	79STE 01
309	24		ITNA	77ROW 04
310		11	ICPES	85HAR 01
310		35	ITNA	81GLA 03
310	10	11	ICPES	85HAR 01
310	30		ITNA	78MAC 01
311	25		ITNA	75NAD 02
311	25		ITNA	78NAD 02
314	20		PAA	74CHA 01
314	43		ITNA	81WAN 01
315	20		PAA	76CHA 01
320	20		NAA	76HAN 01
320	77		ITNA	85FIL 01
322	20		IENA	77ROW 03
337	42		ITNA	73SHE 01
338	13.8		IENA	76STE 05
338	14	D	NAA	79STE 01
345	70		ITNA	76WEW 01
350			ITNA	78WEA 01
350	20		ITNA	77MAE 01
350	30		ITNA	79GRE 01
352	30		ITNA	75OND 01
354	84		ITNA	79ROS 03
360	20	9	ITNA	78LAU 02
366	34		ITNA	75RUC 01
385	40		ITNA	77CAH 01
390	20		ITNA	73ABE 01
390	40		ITNA	79FRU 01
405			ITNA	75KLE 01
410	82		OES	76WEW 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference
Be (ug/g)				
1.1	0.47		ICPES	84NAD 01
1.2	0.07		OES	76WEW 01
1.24			FAA	75POL 01
1.49	0.03		FLUOR	77WIC 01
1.5			AA	76WEW 01
1.5	0.1		FAA	75OWE 01
1.52	0.11	6	FAA	77GLA 02
1.56	0.07	11	AA	82LIN 03
1.57	0.12	6	FAA	77GLA 02
1.63	0.05	11	AA	82LIN 03
1.69	0.07	11	AA	82LIN 03
1.7		4	AA	79REI 01
1.7			ITNA	77GLU 01
1.7	0.03		ICPES	81CHU 01
1.7	0.4	35	FAA	76GLA 02
1.77			ICPES	80NAD 01
1.85			ICPES	80NAD 01
Bi (ug/g)				
<	1	L	WXRF	82MIL 01
<	1	L	PAA	76CHA 01
<	1	L	AA	76WEW 01
<	1.5	L	OES	76WEW 01
1.05			PAA	74CHA 01
Br (ug/g)				
7.8	5.8		ITNA	81WAN 01
14	2		ITNA	76STE 05
14.2			ITNA	75KLE 01
15	1		ITNA	78MAC 01
15.2	1.4		ITNA	75NAD 02
15.2	1.4		ITNA	78NAD 02
15.6	0.4		ITNA	85GAU 04
16.2	1	5	IENA	79GLA 02
16.6	0.6		NAA	76HAN 01
17	1		ITNA	78LAU 02
17	2		ITNA	79FRU 01
17	2		ITNA	73ABE 01
17	2		XRF	79FRU 01
17.2			ITNA	76RAG 01
17.4	1.1		IENA	84GLA 02
17.5	0.3		EXRF	79GIA 01
17.9	0.3	5	IENA	79GLA 02
18		34	WXRF	82MIL 01
18	2		ITNA	76KUC 01
18.2	2.3		ITNA	75RUC 01
18.8	0.9		ITNA	83NDI 01
18.8	2.4		ITNA	77CAH 01
19	1		XRF	79PRA 01

Conc	Uncer	Com	Method	Reference
Br (ug/g) cont.				
19	4		ITNA	75RIC 01
19.2	0.6		ITNA	77ROW 04
19.2	1.2		ITNA	77MAE 01
19.3			ITNA	78WEA 01
19.3	1.9		ITNA	75OND 01
19.5	0.3		IENA	76STE 05
19.6	0.4	D	NAA	79STE 01
19.6	0.4	D	IENA	77ROW 04
19.6	0.4		IENA	77ROW 03
20			ITNA	77GLU 01
20	2		ITNA	79GRE 01
20	3		ITNA	73SHE 01
23.7	3.2		EXRF	73SPA 01
38	1		ITNA	82SUZ 02
C (%)				
68.93	0.11		CB	80SCH 02
69.6	2.1	35	CB	79GLA 04
70	5	D	TCGS	80AND 01
70	5		TCGS	79FAI 01
71.7			CB	79PRA 01
73	3	35	TCGS	79GLA 04
Ca (ug/g)				
2400	600		ITNA	82SUZ 02
2840	80		GAMMA	75OND 01
3300	500	D	TCGS	80AND 01
3300	500		TCGS	79FAI 01
3500	300	D	NAA	79STE 01
3500	300		ITNA	76STE 05
3500	2800		ITNA	77ROW 03
3600			ITNA	84CLE 01
3700	400		NAA	76HAN 01
3890	40	11	ICPES	85HAR 01
3940		11	ICPES	85HAR 01
4000			ICPES	80NAD 01
4030	480		14NAA	77VAN 01
4070	560		ITNA	73SHE 01
4100	400		ITNA	79GRE 01
4100	500		ITNA	81WAN 01
4140	140		ICPES	81CHU 01
4200			ICPES	80NAD 01
4200	300		ITNA	77MAE 01
4200	400		PAA	76CHA 01
4200	500		XRF	79FRU 01
4200	500		ITNA	75OND 01
4200	600		ITNA	76RAG 01
4300	200		ITNA	78NAD 02
4300	200		ITNA	75NAD 02

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference
Ca (ug/g) cont.				
4400			ITNA	75KLE 01
4400	100		ICPES	84NAD 01
4400	900		ITNA	76WEW 01
4420	120		XRF	79PRA 01
4500			ICPES	80NAD 01
4700	600		PAA	75OND 01
4950		4	AA	79REI 01
5000			ICPES	80NAD 01
5100	1000		OES	76WEW 01
5300		35	ITNA	81GLA 03
7000			ITNA	77GLU 01
Cd (ng/g)				
170	6	7	FAA	85FUD 01
170	36		SSMS	77PAU 01
180	10		AF	75EPS 01
180	14		AF	74RAI 01
180	20	D	TCGS	80AND 01
180	20		TCGS	79FAI 01
180	40	6	PAA	82SEG 01
190			POL	74MAI 01
190	2	7	FAA	85FUD 01
199	20		PAA	74CHA 01
200	20		RTNA	77JER 01
200	20		PAA	77JER 01
200	20		PAA	76CHA 01
200	50	6	TCGS	76GLA 01
200	100	6	PAA	82SEG 01
210	10		FAA	77GLU 01
210	20		FAA	74RAI 01
230	10	7	AA	73TAL 01
230	10		FAA	74TAL 01
230	20		RTNA	74ORV 01
230	20		RTNA	84DEL 01
230	21	8	SSMS	80KOP 01
240	30		FAA	74TAL 01
240	30	7	AA	73TAL 01
250			FAA	78GUI 01
250			FAA	75POL 01
250	70		PAA	80SEG 01
310			IDMS	75KLE 01
310			AA	76WEW 01
400	200		SSMS	77DON 01
700	350		OES	76WEW 01

Conc	Uncer	Com	Method	Reference
Ce (ug/g)				
17.34	0.089		ITNA	73SHE 01
18.5			ITNA	75KLE 01
18.8	1		ITNA	76RAG 01
19	0.7		ITNA	85FIL 01
19	1		ITNA	78LAU 02
19.5	0.7	D	ITNA	77ROW 04
19.5	0.7		ITNA	77ROW 03
19.5	0.7		ITNA	77MAE 01
19.5	0.7	D	NAA	79STE 01
19.5	1		ITNA	75OND 01
19.7	0.2		ITNA	76WEW 01
19.7	0.56		ITNA	75NAD 02
19.7	0.6		ITNA	78NAD 02
20			ITNA	75MIL 01
20	1.2		PAA	76CHA 01
20.1	3.7		ITNA	77CAH 01
20.4	0.3		ITNA	84ODD 01
20.6	0.2		RTNA	84ODD 01
21	1		ITNA	79GRE 01
21.2	3.5		ITNA	81WAN 01
21.5	1.7		NAA	76HAN 01
21.5	1.8		ITNA	83NDI 01
22.6	2.2		IENA	77ROW 04
22.8	0.5		ICPES	81CHU 01
23			OES	82GUP 02
23.3	2.7		ITNA	75RUC 01
24		34	WXRF	82MIL 01
26	5		ITNA	78MAC 01
29	1	12	ITNA	82SUZ 02
29	1	12	ITNA	82SUZ 02
30	15		OES	76WEW 01
Cl (ug/g)				
80	20		ITNA	73ABE 01
750	75		ITNA	73SHE 01
760		35	ITNA	81GLA 03
800	50		ITNA	78MAC 01
810		34	WXRF	82MIL 01
810	30		ITNA	82SUZ 02
811	5		XRF	79PRA 01
817	96		ITNA	81WAN 01
828	22		ITNA	76RAG 01
844	37		ITNA	77ROW 03
844	37		ITNA	76STE 05
844	37	D	NAA	79STE 01
846	44		ITNA	75RUC 01
850	40		IC	85GEN 01
850	150		ITNA	79FRU 01
860	54		ITNA	77CAH 01
866	40		ITNA	75RIC 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference
Cl (ug/g) cont.				
880			ITNA	84GLA 02
890			ITNA	78WEA 01
890	50		ITNA	79GRE 01
890	100		PAA	76CHA 01
890	125		ITNA	75OND 01
895	15	D	TCGS	80AND 01
895	15		TCGS	79FAI 01
915			ISE	81NAD 01
915			IC	83NAD 01
920	30		NAA	76HAN 01
930			ISE	83NAD 01
930	48		PAA	74CHA 01
945	35		ITNA	75NAD 02
945	35		ITNA	78NAD 02
990	20		ITNA	77MAE 01
1000			ITNA	77GLU 01
1000			ITNA	75KLE 01
1177			ISE	80NAD 01
Co (ug/g)				
3.9	0.2		ICPES	81CHU 01
4.3		11	ICPES	85HAR 01
4.7	0.32		OES	76WEW 01
4.8	0.3		ITNA	76BLO 01
4.9			ICPES	80NAD 01
5.0		34	WXRF	82MIL 01
5.1	0.6		ITNA	78NAD 02
5.13	0.57		ITNA	75NAD 02
5.2	0.1		ITNA	79FRU 01
5.2	0.4		ITNA	73ABE 01
5.3	0.4		ITNA	76KUC 01
5.31	0.41		ITNA	83NDI 01
5.4		4	AA	79REI 01
5.46	0.2		ITNA	79ROS 03
5.48	0.15		ITNA	73SHE 01
5.5	0.3		ITNA	77CAH 01
5.5	0.4		PAA	74CHA 01
5.5	0.6		ICPES	84NAD 01
5.51	0.6		ITNA	76RAG 01
5.58	0.21		ITNA	75RUC 01
5.6	0.4		PAA	76CHA 01
5.7			ITNA	78WEA 01
5.7	0.1		ITNA	78LAU 02
5.7	0.12		ITNA	77ROW 03
5.7	0.12	D	NAA	79STE 01
5.7	0.12		IENA	77ROW 04
5.7	0.3	11	ICPES	85HAR 01
5.7	0.4		ITNA	75OND 01
5.78			ICPES	80NAD 01
5.8	0.6		ITNA	76WEW 01
Co (ug/g) cont.				
5.8	0.6		ITNA	85FIL 01
5.9			ITNA	75KLE 01
5.9	0.5		AA	79ROS 03
6	0.02		ITNA	78MAC 01
6	0.2		ITNA	79GRE 01
6.01	0.16		ITNA	77ROW 04
6.1	0.1		ITNA	77MAE 01
6.2			ITNA	75MIL 01
6.39	0.74		ITNA	81WAN 01
6.5	0.2		ITNA	82SUZ 02
6.57	0.47		NAA	76HAN 01
6.6			ITNA	84CLE 01
6.9		35	ITNA	81GLA 03
7			AA	76WEW 01
8.5	4.2		EXRF	79GIA 01
11			ITNA	77GLU 01
Cr (ug/g)				
8			EXRF	82KEE 01
9	2		XRF	79PRA 01
14.1	3.2		ICPES	84NAD 01
15			ICPES	80NAD 01
16		11	ICPES	85HAR 01
16	1.2		OES	76WEW 01
17	1		ITNA	75RIC 01
17	1	11	ICPES	85HAR 01
17.6	1		ITNA	76RAG 01
17.8	2		ITNA	77CAH 01
18			ICPES	80NAD 01
18	2		XRF	79FRU 01
18.3	1.8		ITNA	85FIL 01
18.5	1.7		ITNA	78MAC 01
18.8	1.1		ITNA	76BLO 01
18.9	2.2		ITNA	75NAD 02
18.9	2.2		ITNA	78NAD 02
19			AA	76WEW 01
19	0.8		ITNA	73SHE 01
19	2		ITNA	79FRU 01
19	2		ITNA	73ABE 01
19	2.8		ITNA	79ROS 03
19	3		SSMS	77DON 01
19.4			FAA	75POL 01
19.4	1.3	11	AA	82LIN 03
19.5	0.8		PAA	76CHA 01
19.6	0.5		ITNA	77MAE 01
19.6	0.6		AA	79ROS 03
19.7	0.9	D	NAA	74OND 01
19.7	0.9		ITNA	75OND 01
19.8			FAA	78GUI 01
20			AA	78GUI 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference
Cr (ug/g) cont.				
20			ITNA	84CLE 01
20	1	9	ITNA	78LAU 02
20	3		ITNA	78LAU 02
20.17	0.76		RTNA	74MCC 01
20.2	0.4		AA	74RAI 01
20.3	1.4	11	AA	82LIN 03
20.3	2.9		ITNA	75RUC 01
20.5	0.6		ITNA	79GRE 01
20.6			ITNA	75MIL 01
20.6	2.3		IENA	77ROW 04
20.8	0.6		ICPES	81CHU 01
20.8	0.8		ITNA	77ROW 03
20.8	0.8	D	NAA	79STE 01
20.8	0.8	D	ITNA	77ROW 04
21	2		ITNA	75KLE 01
21.5			ITNA	78WEA 01
21.5	1		NAA	76HAN 01
21.6	2		ITNA	76WEW 01
21.6	2.1		PAA	74CHA 01
22			ITNA	77GLU 01
22	8		EXRF	79GIA 01
23		4	AA	79REI 01
24	3		ITNA	76KUC 01
25.2	3.8		ITNA	81WAN 01
32.3	0.9	12	ITNA	82SUZ 02
34.9	0.9	12	ITNA	82SUZ 02
Cs (ug/g)				
0.35	0.04		PAA	74CHA 01
1.3	0.1		PAA	76CHA 01
1.3	0.2		ITNA	78LAU 02
1.32	0.11		ITNA	78NAD 02
1.32	0.11		ITNA	75NAD 02
1.36	0.1		IENA	76STE 05
1.4			ITNA	75KLE 01
1.4		34	WXRF	82MIL 01
1.4			ITNA	78WEA 01
1.4	0.08		ITNA	76RAG 01
1.4	0.1		ITNA	73ABE 01
1.4	0.1	9	ITNA	78LAU 02
1.4	0.1		ITNA	75OND 01
1.4	0.3		ITNA	76WEW 01
1.46	0.11		IENA	77ROW 03
1.49	0.22		ITNA	77ROW 04
1.52	0.11		IENA	77ROW 04
1.52	0.11	D	NAA	79STE 01
1.6	0.1		ITNA	85FIL 01
1.6	0.2		ITNA	79GRE 01
1.71	0.04		ITNA	77MAE 01
1.73	0.09		ITNA	79ROS 03

Conc	Uncer	Com	Method	Reference
Cs (ug/g) cont.				
1.8		35	ITNA	81GLA 03
1.8	0.1		NAA	76HAN 01
1.8	0.3		ITNA	75RUC 01
1.8	0.3		ITNA	77CAH 01
1.9	0.2		ITNA	81WAN 01
2.3	0.1		ITNA	82SUZ 02
2.55	0.06		ITNA	73SHE 01
2.6			ITNA	75MIL 01
3.5	1.3		ITNA	78MAC 01
Cu (ug/g)				
13			EXRF	82KEE 01
14.1	0.9		ITNA	73SHE 01
15	1.2		ITNA	77ROW 03
15	1.2	D	NAA	79STE 01
15	1.2		ITNA	76STE 05
15	2		XRF	79FRU 01
15	3		SSMS	77DON 01
15.1	0.7	11	ICPES	85HAR 01
15.7	2.7		ITNA	81WAN 01
16.3			FAA	78GUI 01
16.8			AA	78GUI 01
16.8	1	8	SSMS	80KOP 01
17	0.3		AA	73TAL 01
17	1	35	RTNA	77GLA 01
17	4		EXRF	81KIN 01
17	7.5		OES	76WEW 01
17.1	0.2	11	AA	82LIN 03
17.2	0.5		ICPES	81CHU 01
17.4		11	ICPES	85HAR 01
17.7	1.5		EXRF	79GIA 01
17.9	0.2		AA	74RAI 01
18			ICPES	80NAD 01
18			XRF	75KLE 01
18		34	WXRF	82MIL 01
18.1	0.8		NAA	76HAN 01
18.4	0.3	11	AA	82LIN 03
18.4	1.1		SSMS	77PAU 01
19			ICPES	80NAD 01
19	3		ICPES	84NAD 01
19.4	1.9		FAA	74RAI 01
20		4	AA	79REI 01
21			AA	76WEW 01
22.6	3		EXRF	73SPA 01
23			ITNA	77GLU 01
24	3		XRF	79PRA 01
24	3	6	PAA	82SEG 01
30	10	6	PAA	82SEG 01
30	10		PAA	80SEG 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference
Dy (ug/g)				
0.57	0.04		NAA	76HAN 01
0.85	0.06		ITNA	73SHE 01
1	0.1		ITNA	78MAC 01
1.1	0.1		RTNA	84ODD 01
1.12	0.06	D	NAA	79STE 01
1.12	0.06		ITNA	76STE 05
1.12	0.06		ITNA	77ROW 03
1.2	0.2		ITNA	84ODD 01
1.3			AA	82GUP 02
1.3	0.5		ITNA	75RUC 01
1.38	0.09		ITNA	75NAD 02
1.4			ITNA	75MIL 01
1.4	0.1		ITNA	78NAD 02
1.59	0.16		ITNA	77CAH 01
2.4	0.2		ITNA	82SUZ 02
Er (ug/g)				
<	3	L	WXRF	82MIL 01
<	15	L	OES	76WEW 01
0.7			AA	82GUP 02
9.3	0.2		RTNA	84ODD 01
Eu (ng/g)				
210			ITNA	75KLE 01
270	20		ITNA	76RAG 01
280	10		ITNA	73ABE 01
299	33		ITNA	76STE 05
300	100		ITNA	78MAC 01
312	37		ITNA	73SHE 01
330			ITNA	78WEA 01
330	40		ITNA	75OND 01
340	10		NAA	76HAN 01
340	14		ITNA	83NDI 01
340	20		ITNA	78LAU 02
340	40		ITNA	77ROW 03
340	50		ITNA	84ODD 01
344	15		ITNA	79ROS 03
350	30		RTNA	84ODD 01
360	30		ITNA	77CAH 01
370	20		ITNA	78NAD 02
370	20		ITNA	75NAD 02
370	40		ITNA	76WEW 01
380	40	D	NAA	79STE 01
380	40		ITNA	77ROW 04
380	40		ITNA	79GRE 01
390	40		ITNA	85FIL 01
400			AA	82GUP 02
400			ITNA	75MIL 01
410	30		ITNA	75RUC 01
410	60		OES	76WEW 01
420	10		ITNA	77MAE 01
420	20		ICPES	81CHU 01
480	90		ITNA	81WAN 01
500	60		ITNA	82SUZ 02
F (ug/g)				
51			ITNA	77GLU 01
65			ISE	83KNA 01
71			IC	83NAD 01
71			ISE	81NAD 01
80	4		ISE	74THO 01
81			VV	77GLU 01
87			ISE	74THO 01
90			ISE	83NAD 01
91	5		ISE	83BET 02
100			AA	76WEW 01
Fe (ug/g)				
6500	1300		OES	76WEW 01
7000	400		ITNA	76BLO 01
7150	800		EXRF	73SPA 01
7200			EXRF	82KEE 01
7517	119		ITNA	73SHE 01
7600	100		ICPES	84NAD 01
7790	360		EXRF	79GIA 01
7800	200		ITNA	75RIC 01
7800	350		XRF	79FRU 01
7900			ITNA	84CLE 01
8000			ICPES	80NAD 01
8100	500		ITNA	79FRU 01
8100	700		ITNA	73ABE 01
8200			ICPES	80NAD 01
8230	80	11	ICPES	85HAR 01
8300			ICPES	80NAD 01
8300	600		ITNA	85FIL 01
8300	700		ITNA	76KUC 01
8350	120		AA	79ROS 03
8380	405		ITNA	83NDI 01
8400			ITNA	75KLE 01
8400	200	D	TCGS	80AND 01
8400	200		ITNA	78LAU 02
8400	200		ITNA	76RAG 01
8400	400		ITNA	75OND 01
8400	400	D	NAA	74OND 01
8410	250		IENA	77ROW 04
8420	240		TCGS	79FAI 01
8440		11	ICPES	85HAR 01
8500	60		ITNA	75NAD 02

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference
Fe (ug/g) cont.				
8500	600		ITNA	78NAD 02
8527			AA	78GUI 01
8600			POL	74MAI 01
8600			ITNA	78WEA 01
8630	266		EXRF	81KIN 01
8690	410		PAA	74CHA 01
8700		35	ITNA	81GLA 03
8700	200		ITNA	79GRE 01
8700	400		PAA	76CHA 01
8730			AA	76WEW 01
8800			ICPES	80NAD 01
8800	200		ITNA	77MAE 01
8810	210		ICPES	81CHU 01
8900	240		XRF	79PRA 01
8900	300		ITNA	78MAC 01
9000	200	D	NAA	79STE 01
9010	150		ITNA	77ROW 03
9010	190	D	ITNA	77ROW 04
9030			ITNA	75MIL 01
9130	560		ITNA	79ROS 03
9200		4	AA	79REI 01
9200	300		NAA	76HAN 01
9200	700		ITNA	81WAN 01
9300	800		ITNA	75RUC 01
9300	800		ITNA	77CAH 01
9800	1000		ITNA	76WEW 01
11100			ITNA	77GLU 01
11100	300	12	ITNA	82SUZ 02
11300	500	12	ITNA	82SUZ 02
Ga (ug/g)				
4.5			ITNA	77GLU 01
4.5	0.5		RTNA	75RUC 01
4.8	0.2		IENA	78WAN 01
5	1		ITNA	78MAC 01
5.15	0.3		ITNA	75RUC 01
5.3	0.5		ITNA	77CAH 01
5.4	0.8		ITNA	73SHE 01
5.5	0.7		ITNA	81WAN 01
5.8		34	WXRF	82MIL 01
5.8	0.4		IENA	77ROW 03
5.8	0.4	D	NAA	79STE 01
5.8	0.4	5	IENA	76STE 05
5.8	0.5		ITNA	85FIL 01
6.1	0.3		EXRF	79GIA 01
6.1	0.6	5	IENA	76STE 05
6.2	0.3		OES	76WEW 01
7.7	1.4		ITNA	82SUZ 02
8	1		XRF	79PRA 01
8.5			XRF	75KLE 01
9	2		NAA	76HAN 01
Gd (ug/g)				
1.2			AA	82GUP 02
1.2	0.06		ICPES	81CHU 01
1.43	0.05		TCGS	79FAI 01
2.2	0.08		TCGS	80AND 01
2.5			ITNA	75MIL 01
3		34	WXRF	82MIL 01
3	0.9		ITNA	84ODD 01
3.1	0.2		RTNA	84ODD 01
3.6	0.4		ITNA	78NAD 02
3.62	0.35		ITNA	75NAD 02
Ge (ug/g)				
2			ITNA	77GLU 01
2.3	0.1		ICPES	84NAD 02
2.4			UU	78SIM 01
2.7	0.22		OES	76WEW 01
2.9	0.2		EXRF	79GIA 01
3		34	WXRF	82MIL 01
5	1		XRF	79PRA 01
14.9			FAA	75POL 01
70	5		ITNA	73SHE 01
H (%)				
4.02	0.05		TCGS	79FAI 01
4.02	0.05	D	TCGS	80AND 01
4.28	0.03		CB	80SCH 02
4.3	0.1	35	TCGS	79GLA 04
4.57			CB	79PRA 01
H2O-T (%)				
2.6			FD	80KHA 02
Hf (ug/g)				
0.72	0.071		ITNA	79ROS 03
0.81	0.1		ITNA	78LAU 02
0.83	0.06		IENA	77ROW 03
0.83	0.06	D	IENA	77ROW 04
0.83	0.06	D	NAA	79STE 01
0.89	0.02		ITNA	75NAD 02
0.89	0.02		ITNA	78NAD 02
0.91	0.11		ITNA	77ROW 04
0.91	0.15		ITNA	85FIL 01
0.92	0.05		ITNA	73SHE 01
0.95			ITNA	75KLE 01
0.96			ITNA	78WEA 01
0.96	0.05		ITNA	75OND 01
0.96	0.06		ITNA	79GRE 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference
Hf (ug/g) cont.				
0.97	0.09		ITNA	79FRU 01
0.97	0.1		ITNA	73ABE 01
1.00	0.07		ITNA	76RAG 01
1.02	0.03		ITNA	77MAE 01
1.1			ITNA	75MIL 01
1.1	0.07		NAA	76HAN 01
1.1	0.15		ITNA	75RUC 01
1.1	0.2		ITNA	77CAH 01
1.1	0.4		ITNA	81WAN 01
1.15	0.12		ITNA	76WEW 01
1.4	0.09	9	ITNA	82SUZ 02
1.53	0.5	9	ITNA	82SUZ 02
Hg (ng/g)				
70	5		CVAA	84BAR 02
88	5		CVAA	75KLE 01
100			PAA	74CHA 01
100			PAA	76CHA 01
100			PAA	77JER 01
110			ITNA	78WEA 01
110	10		RTNA	84DEL 01
110	10		RTNA	74ORV 01
110	10		RTNA	75RUC 01
110	16		RTNA	77JER 01
110	50		ITNA	77JER 01
111	10		FAA	77GLA 03
117	13		FAA	75KOI 01
120			CVAA	82NAD 01
120			CVAA	81NAD 01
120	20		ITNA	79FRU 01
122	29		CVAA	80DUM 01
126	6		CVAA	74RAI 01
136	9		FAA	82UCH 02
160	40		ITNA	82SUZ 02
160	80		ITNA	76WEW 01
180			ITNA	77GLU 01
230	20		ITNA	78NAD 02
230	20		ITNA	75NAD 02
230	50		ITNA	76BLO 01
510	170		ITNA	75RIC 01
950	90		ITNA	73SHE 01
Ho (ng/g)				
240	30		IENA	77ROW 03
240	30		IENA	76STE 05
240	30	D	NAA	79STE 01
250			FAA	82GUP 02
260	30		ITNA	84ODD 01
270	40		RTNA	84ODD 01

Conc	Uncer	Com	Method	Reference
I (ug/g)				
2.68	0.2		RTNA	77ROO 01
2.78	0.38		ITNA	73SHE 01
2.8			ITNA	78WEA 01
2.8	0.4		ITNA	75RUC 01
2.9	0.3	D	NAA	79STE 01
2.9	0.3		ITNA	76STE 05
3		34	WXRF	82MIL 01
3.3	0.3		PAA	77WIL 01
3.3	0.3		PAA	78HIS 01
3.3	0.4		ITNA	77CAH 01
3.3	0.5		ITNA	77MAE 01
3.7	0.5		IENA	84GLA 02
4	1		ITNA	79GRE 01
6.2	1.9		ITNA	81WAN 01
6.63	1.2		ITNA	75NAD 02
In (ng/g)				
16.9	1.2		IENA	77ROW 03
16.9	1.7	5	IENA	76STE 05
17	1	D	NAA	79STE 01
17.8	1	5	IENA	76STE 05
30	20		ITNA	76RAG 01
40	10		ITNA	73SHE 01
56	9		ITNA	82SUZ 02
70			ITNA	75KLE 01
180	20		ITNA	77CAH 01
200	120		ITNA	75OND 01
220	20		ITNA	75RUC 01
230	20		PAA	74CHA 01
230	30		PAA	76CHA 01
Ir (ng/g)				
2.48	0.27		ITNA	73SHE 01
2.5			ITNA	78WEA 01
3.53	0.52		RTNA	77NAD 02
K (ug/g)				
2410	70		XRF	79PRA 01
2500			ICPES	80NAD 01
2500	200	11	ICPES	85HAR 01
2500	200		ICPES	84NAD 01
2570		4	AA	79REI 01
2600		11	ICPES	85HAR 01
2600	200		ITNA	76KUC 01
2650	190		ITNA	76BLO 01
2660	20		ITNA	75RIC 01
2700			ICPES	80NAD 01
2700			ICPES	80NAD 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference
K (ug/g) cont.				
2700	100		PAA	76CHA 01
2700	200		ITNA	79FRU 01
2700	200		ITNA	76RAG 01
2700	300		NAA	76HAN 01
2750	100	D	TCGS	80AND 01
2750	100		TCGS	79FAI 01
2780	230		ITNA	75NAD 02
2800			ITNA	78WEA 01
2800	100		ITNA	73ABE 01
2800	200		ITNA	77MAE 01
2800	200		ITNA	79GRE 01
2800	200		ITNA	78NAD 02
2800	200		ITNA	78LAU 02
2800	300		ITNA	75OND 01
2800	300		ITNA	77CAH 01
2800	500		ITNA	76WEW 01
2840	80		GAMMA	73ABE 01
2900			ITNA	75MIL 01
2900			ITNA	75KLE 01
2900			ICPES	80NAD 01
2900	200		ITNA	75RUC 01
2930	120		ITNA	83NDI 01
2980	200		ITNA	76STE 05
2980	240		ITNA	77ROW 03
3000	75		ICPES	81CHU 01
3000	200	D	NAA	79STE 01
3000	200		ITNA	78MAC 01
3040	230		ITNA	85FIL 01
3100	500		ITNA	81WAN 01
3100	600		OES	76WEW 01
3300			ITNA	77GLU 01
3500	360		ITNA	73SHE 01
4000	200		ITNA	82SUZ 02
La (ug/g)				
6	0.17		OES	76WEW 01
7.89	0.15		ITNA	75NAD 02
7.9	0.2		ITNA	78NAD 02
8.3	0.2		ITNA	78MAC 01
9.1	0.4		ITNA	76BLO 01
9.3	0.3		ICPES	81CHU 01
9.3	0.5		ITNA	78LAU 02
9.5	0.2		ITNA	76RAG 01
9.76	0.45		NAA	76HAN 01
10		34	WXRF	82MIL 01
10			FAA	82GUP 02
10.3	0.5		ITNA	77ROW 03
10.3	0.5	D	ITNA	77ROW 04
10.3	0.5	D	NAA	79STE 01
10.3	1.1		ITNA	76STE 05

Conc	Uncer	Com	Method	Reference
La (ug/g) cont.				
10.5			ITNA	75KLE 01
10.5	0.2		ITNA	79FRU 01
10.5	0.5		ITNA	73ABE 01
10.5	0.9		ITNA	81WAN 01
10.6	0.4		ITNA	77CAH 01
10.7			ITNA	78WEA 01
10.7	0.3		ITNA	77MAE 01
10.7	0.4		ITNA	82SUZ 02
10.7	1.2		ITNA	75OND 01
10.8	0.3		RTNA	84ODD 01
10.8	0.8		IENA	77ROW 04
11			OES	82GUP 02
11	1		ITNA	85FIL 01
11.2	0.3		ITNA	83NDI 01
11.3			ITNA	75MIL 01
11.3	0.4		ITNA	75RUC 01
11.3	3.3		ITNA	73SHE 01
11.4	0.3	11	ICPES	85HAR 01
11.4	0.4		ITNA	84ODD 01
11.4	0.5		IENA	77ROW 03
11.4	0.5		IENA	76STE 05
11.5	0.7		ITNA	79GRE 01
12.7		11	ICPES	85HAR 01
Li (ug/g)				
24	1.1		OES	76WEW 01
25			AA	76WEW 01
28.7	0.6		ICPES	81CHU 01
Lu (ng/g)				
100			ITNA	75MIL 01
100			FAA	82GUP 02
109	11	D	ITNA	77ROW 04
109	11	D	NAA	79STE 01
109	11		ITNA	77ROW 03
120	5		ITNA	75NAD 02
120	10		ITNA	78NAD 02
130	5		ITNA	77MAE 01
130	20		ITNA	84ODD 01
130	30		ITNA	77CAH 01
140	10		ITNA	75OND 01
140	20		ITNA	78LAU 02
140	20		NAA	76HAN 01
140	30		RTNA	84ODD 01
140	70		ITNA	81WAN 01
150	10		ITNA	75RUC 01
150	20		ITNA	76WEW 01
210	20		ITNA	82SUZ 02
416	17		ITNA	73SHE 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference
Mg (ug/g)				
980	250		ITNA	73SHE 01
1000	100		ICPES	84NAD 01
1100			ITNA	77GLU 01
1100	300		ITNA	77MAE 01
1150	40	11	ICPES	85HAR 01
1190		11	ICPES	85HAR 01
1200			ICPES	80NAD 01
1200			ICPES	80NAD 01
1340	270		ITNA	82SUZ 02
1370	40		ICPES	81CHU 01
1400			ICPES	80NAD 01
1500	300		ITNA	75NAD 02
1500	300		ITNA	78NAD 02
1600			ICPES	80NAD 01
1600	150		PAA	74CHA 01
1600	200		PAA	76CHA 01
1600	300		OES	76WEW 01
1700	200		ITNA	79GRE 01
1700	300		ITNA	76STE 05
1700	300	D	NAA	79STE 01
1700	300		ITNA	77ROW 03
1900	400		NAA	76HAN 01
2000	400		ITNA	76WEW 01
2000	500		ITNA	75OND 01
2300	400		ITNA	81WAN 01
2300	700		ITNA	73ABE 01
2480			ITNA	75KLE 01
2500	800		ITNA	76RAG 01
4000	2000		ITNA	78LAU 02
8200	2000		ITNA	78MAC 01
Mn (ug/g)				
27.5	2.4		ITNA	82SUZ 02
36	1.8		OES	76WEW 01
36.8			FAA	78GUI 01
37			EXRF	82KEE 01
37	2		EXRF	81KIN 01
37	4		XRF	79PRA 01
38		4	AA	79REI 01
38	2.6		ITNA	73SHE 01
38	8	35	ITNA	81GLA 03
38.3	0.8	11	ICPES	85HAR 01
38.5			AA	78GUI 01
39		34	WXRF	82MIL 01
39			ITNA	84CLE 01
39			ITNA	77GLU 01
39	2		ICPES	84NAD 01
39	3		EXRF	79GIA 01
39.5	0.7		ITNA	76RAG 01
40			AA	76WEW 01

Conc	Uncer	Com	Method	Reference
Mn (ug/g) cont.				
40	4		ITNA	76WEW 01
40	7		ITNA	78NAD 02
40.3	6.9		ITNA	75NAD 02
41			ITNA	78WEA 01
41	1		ITNA	75RIC 01
41	2		NAA	76HAN 01
41	4	D	NAA	79STE 01
41	6		ITNA	80BUA 01
41	6		ITNA	73ABE 01
41.1	3.6		ITNA	76STE 05
41.1	3.6		ITNA	77ROW 03
41.2		11	ICPES	85HAR 01
41.7	0.5		AA	79ROS 03
42			ICPES	80NAD 01
42	1		ITNA	79GRE 01
42	6		ITNA	79FRU 01
42.5	5.8		ITNA	81WAN 01
42.8	1.9		ITNA	83NDI 01
42.8	2.4		ITNA	77CAH 01
43	1		ITNA	78MAC 01
43	3		PAA	76CHA 01
43	4	D	NAA	74OND 01
43	4		ITNA	75OND 01
43	6		ITNA	76BLO 01
43.5	2.4		TCGS	79FAI 01
43.5	2.4	D	TCGS	80AND 01
43.7	1.8		ITNA	75RUC 01
44	0.9	11	AA	82LIN 03
44	2		ITNA	78LAU 02
44.5	0.9		ITNA	77MAE 01
44.6	0.4	11	AA	82LIN 03
45			ICPES	80NAD 01
45	1.4		ICPES	81CHU 01
45	3		ITNA	76KUC 01
46			ITNA	75MIL 01
46	3		ITNA	75KLE 01
47.1	4.1		PAA	74CHA 01
Mo (ug/g)				
0.2	0.02		PAA	74CHA 01
0.2	0.04		PAA	76CHA 01
0.3	0.1		PAA	80SEG 01
0.3	0.1	6	PAA	82SEG 01
0.3	0.1	6	PAA	82SEG 01
0.41	0.1		ITNA	82SUZ 02
3.08	0.12		IENA	77ROW 03
3.08	0.12	D	IENA	77ROW 04
3.1	0.1	D	NAA	79STE 01
3.14	0.28		RTNA	78NAD 01
3.2	0.4		ITNA	77CAH 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference
Mo (ug/g) cont.				
3.3			ICPES	80NAD 01
3.4			ITNA	75KLE 01
3.6	0.16		OES	76WEW 01
4		34	WXRF	82MIL 01
4.7			ICPES	80NAD 01
5			ITNA	78WEA 01
5			ITNA	77GLU 01
N (%)				
1.01			IC	83NAD 01
1.2	0.2	35	TCGS	79GLA 04
1.3	0.02		CB	80SCH 02
1.3	0.2	D	TCGS	80AND 01
1.3	0.2		TCGS	79FAI 01
1.98			CB	79PRA 01
Na (ug/g)				
325	6		ITNA	75RIC 01
330		11	ICPES	85HAR 01
330	20	11	ICPES	85HAR 01
335			ICPES	80NAD 01
340	10		ITNA	78LAU 02
347	32		ITNA	75NAD 02
350	20		PAA	76CHA 01
350	30		ITNA	78NAD 02
351	30		PAA	74CHA 01
352	34		ITNA	77CAH 01
353	21		ITNA	76KUC 01
360	10		ITNA	79GRE 01
360	20		NAA	76HAN 01
368	9		ITNA	77MAE 01
370			ICPES	80NAD 01
370	33		ITNA	73SHE 01
380			ICPES	80NAD 01
380	3		ITNA	78MAC 01
380	12		ITNA	76RAG 01
380	25		ITNA	76STE 05
380	25		ITNA	77ROW 03
380	25	D	NAA	79STE 01
383	14		ITNA	75RUC 01
387	42		ITNA	81WAN 01
390			ITNA	75KLE 01
390			ITNA	77GLU 01
390		34	WXRF	82MIL 01
395			ITNA	86GAU 01
400			ITNA	84CLE 01
400	7		ICPES	81CHU 01
400	30		ITNA	76BLO 01
400	900	R	ITNA	81GLA 03
Na (ug/g) cont.				
406	7		ITNA	83NDI 01
409			ICPES	80NAD 01
410			ITNA	75MIL 01
414			ITNA	78WEA 01
414	20		ITNA	75OND 01
415	42		ITNA	76WEW 01
420	20		ITNA	79FRU 01
420	30		ITNA	73ABE 01
439	42		ICPES	84NAD 01
480		4	AA	79REI 01
840	30		ITNA	82SUZ 02
1200	240		OES	76WEW 01
Nb (ug/g)				
<	15		OES	76WEW 01
5		34	WXRF	82MIL 01
Nd (ug/g)				
6.4	1.5		ITNA	73SHE 01
7		34	WXRF	82MIL 01
8			AA	82GUP 02
8.7	1	D	NAA	79STE 01
8.7	1	D	ITNA	77ROW 04
8.7	1		ITNA	77ROW 03
9.5	1.9		ICPES	81CHU 01
9.7	0.4		ITNA	84ODD 01
9.9	0.6		RTNA	84ODD 01
10.7			ITNA	75MIL 01
11.3	2		TCGS	79FAI 01
11.3	2	D	TCGS	80AND 01
16.9	1.4	12	ITNA	82SUZ 02
17.8	3.7	12	ITNA	82SUZ 02
Ni (ug/g)				
10			EXRF	82KEE 01
11			IENA	77ROW 03
11.5		11	ICPES	85HAR 01
12	0.7		ITNA	78NAD 02
12.1	0.7		ITNA	75NAD 02
12.5	0.1	11	AA	82LIN 03
13	3	9	ITNA	78LAU 02
13.5	1.2		PAA	74CHA 01
13.8	0.4	11	ICPES	85HAR 01
14		4	AA	79REI 01
14	1		PAA	80SEG 01
14	1	6	PAA	82SEG 01
14	2	6	PAA	82SEG 01
14	2		XRF	79FRU 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference
Ni (ug/g) cont.				
14	2		PAA	76CHA 01
14.3			AA	78GUI 01
14.5			XRF	75KLE 01
14.5	0.6	11	AA	82LIN 03
14.5	1.2		EXRF	79GIA 01
14.7	0.6	6	IDMS	74MOO 01
14.7	0.6	6	IDMS	74MOO 01
14.8			POL	74MAI 01
14.8	0.7	6	IDMS	74MOO 01
15			AA	76WEW 01
15		34	WXRF	82MIL 01
15	1.1		OES	76WEW 01
15	3		SSMS	77DON 01
15.2	0.5		ICPES	81CHU 01
15.5	1.1	8	SSMS	80KOP 01
16		D	NAA	79STE 01
16			ICPES	80NAD 01
16	2		ICPES	84NAD 01
16	2		ITNA	79FRU 01
16	4		ITNA	73ABE 01
16	5		ITNA	77CAH 01
16.4			IENA	77ROW 04
17.1			FAA	78GUI 01
17.5	1		EXRF	81KIN 01
18	4		ITNA	75OND 01
18	4	D	NAA	74OND 01
18	5		NAA	76HAN 01
18.4	2.1		ITNA	75RUC 01
18.9	0.8	12	ITNA	82SUZ 02
19			ICPES	80NAD 01
20			ITNA	77GLU 01
20	11		ITNA	85FIL 01
20.4	1	12	ITNA	82SUZ 02
83	7		XRF	79PRA 01
O (%)				
10.08			CALC	79PRA 01
15.05	0.11	34	14NAA	80KHA 02
Os (ug/g)				
<	1		RTNA	77NAD 02

Conc	Uncer	Com	Method	Reference
P (ug/g)				
71			AA	76WEW 01
92			ICPES	80NAD 01
104			ICPES	80NAD 01
117	4	11	ICPES	85HAR 01
120			VV	77GLU 01
121		11	ICPES	85HAR 01
137	14		ICPES	84NAD 01
138		34	WXRF	82MIL 01
150	9		ICPES	81CHU 01
156			ICPES	81NAD 01
250			COLOR	80NAD 01
270			COLOR	80NAD 01
1200	100		XRF	79PRA 01
Pb (ug/g)				
12	120	R	OES	76WEW 01
13.6	6.5		EXRF	79GIA 01
15			ICPES	80NAD 01
19.1			ICPES	81NAD 01
20			ICPES	80NAD 01
20	2		XRF	79PRA 01
23			VV	77GLU 01
23	0.9		EXRF	73SPA 01
24		4	AA	79REI 01
24	4	11	ICPES	85HAR 01
25.5	4.2	11	AA	82LIN 03
26	6		FAA	76BLO 01
26.1			AA	78GUI 01
27.9	2.5	8	SSMS	80KOP 01
28	1	6	PAA	82SEG 01
28	2		PAA	80SEG 01
28	2	6	PAA	82SEG 01
28	3.6		SSMS	77PAU 01
28	4		IDMS	78CAR 02
28	5		FAA	75BLO 02
28.4			POL	74MAI 01
28.5	1.5		ICPES	81CHU 01
28.6			FAA	78GUI 01
29	0.5		AA	73TAL 01
29	2		PAA	77JER 01
29.4			IDMS	75KLE 01
30			AA	76WEW 01
30.8			FAA	75POL 01
31	3		EXRF	81KIN 01
32		34	WXRF	82MIL 01
32	2		PAA	76CHA 01
32	2		PAA	77JER 01
32.1	1.8		PAA	74CHA 01
33	2		AA	79ROS 03
33	3		SSMS	77DON 01
33.8	0.1	11	AA	82LIN 03
36		11	ICPES	85HAR 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference
Pd (ng/g)				
< 5			RTNA	77NAD 02
Pr (ug/g)				
< 2		L	FAA	82GUP 02
< 15		L	OES	76WEW 01
2		34	WXRF	82MIL 01
3.6	0.4	12	ITNA	82SUZ 02
4.6	0.5	12	ITNA	82SUZ 02
4.9	0.5		RTNA	84ODD 01
Pt (ng/g)				
< 15000		L	OES	76WEW 01
186	2.3		RTNA	77NAD 01
270	20		RTNA	77NAD 02
Rb (ug/g)				
10	3		ITNA	81WAN 01
11	1		XRF	79PRA 01
15		35	ITNA	81GLA 03
16.3	3.7		ITNA	75NAD 02
16.3	3.7		ITNA	78NAD 02
18		34	WXRF	82MIL 01
18	1		XRF	79FRU 01
18.3	1.1	D	IENA	77ROW 04
18.3	1.6		IENA	77ROW 03
18.3	1.6	D	NAA	79STE 01
19	1.5		ITNA	76RAG 01
19	1.9		ITNA	73SHE 01
19	2		ITNA	79FRU 01
19	2		ITNA	73ABE 01
19	6		ITNA	76WEW 01
19.4	2.3		ITNA	77ROW 04
19.5			ITNA	75KLE 01
20	2		PAA	76CHA 01
20	2		PAA	75OND 01
20	2		ITNA	79GRE 01
20	2	9	ITNA	78LAU 02
20	4		ITNA	78LAU 02
20.1	0.6		EXRF	79GIA 01
21			ITNA	78WEA 01
21	2		ITNA	75OND 01
22	2.9		OES	76WEW 01
22.5	0.7		ITNA	77MAE 01
22.5	3.7		ITNA	75RUC 01
22.8	4.8		ITNA	77CAH 01
23	3		NAA	76HAN 01
23	4		ITNA	85FIL 01
23	7		ITNA	76KUC 01
Rb (ug/g) cont.				
24			XRF	75KLE 01
24			ITNA	75MIL 01
24.7	1		ITNA	79ROS 03
26	1	12	ITNA	82SUZ 02
28.6	3.2		EXRF	73SPA 01
30	1	12	ITNA	82SUZ 02
Rh (ug/g)				
< 5		L	OES	76WEW 01
Ru (ng/g)				
< 5000		L	OES	76WEW 01
18	1		RTNA	77NAD 02
S (%)				
0.17			ICPES	80NAD 01
0.17			CB	80NAD 01
0.9			CB	80NAD 01
0.9			ICPES	80NAD 01
1.22			IC	83NAD 01
1.25			XRF	77GLU 01
1.29	0.03	D	TCGS	80AND 01
1.29	0.03		TCGS	79FAI 01
1.3	0.02		IC	85GEN 01
1.32			XRF	82NAD 01
1.32			XRF	81NAD 01
1.32	0.01		CB	86GAU 01
1.32	0.03		CB	85GLA 03
1.32	0.07		TCGS	77JUR 01
1.34	0.08		CB	84GLA 11
1.52	0.05		XRF	79PRA 01
1.99			CB	77LAD 01
2.02			TITR	77LAD 01
Sb (ug/g)				
0.61	0.05		ITNA	82SUZ 02
1.8	0.9		FAA	77ARU 01
2.2			ITNA	75MIL 01
2.3	5.8	R*	COLOR	77ARU 01
2.6	2		ITNA	77ARU 01
2.6	3.6		ITNA	85FIL 01
2.7		5	ITNA	77ROW 04
2.8		5	IENA	77ROW 04
2.8	0.7		ITNA	81WAN 01
3.0		34	WXRF	82MIL 01
3.0		5	ITNA	77ROW 04
3.0			IENA	77ROW 03

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference
Sb (ug/g) cont.				
3.0			RTNA	75RUC 01
3.0		D	NAA	79STE 01
3.0			ITNA	77GLU 01
3.06	1.4		ITNA	75NAD 02
3.09	0.26		PAA	74CHA 01
3.1	1.4		ITNA	78NAD 02
3.2		5	IENA	77ROW 04
3.2		35	ITNA	81GLA 03
3.4	0.1		ITNA	76RAG 01
3.4	0.8		ITNA	75RUC 01
3.6	0.8		ITNA	77CAH 01
3.6	1.2		ITNA	77MAE 01
3.62			FAA	75POL 01
3.7	0.3		ITNA	79FRU 01
3.7	2		ITNA	73ABE 01
3.8			ITNA	84CLE 01
3.8	0.2		ITNA	78MAC 01
3.8	0.4		NAA	76HAN 01
3.82	0.1		ITNA	78LAU 02
3.9			ITNA	78WEA 01
3.9	0.24		ITNA	77JER 01
3.9	0.3		PAA	76CHA 01
3.9	0.3		PAA	77JER 01
3.9	1.3		ITNA	75OND 01
4.1	1.2		ITNA	76WEW 01
4.3	0.3		ITNA	79GRE 01
4.4	0.3		FAA	78HAY 01
4.45			ITNA	75KLE 01
6.4	1.6		ITNA	73SHE 01
Sc (ug/g)				
3.4	0.3		ITNA	77CAH 01
3.4	0.3		ITNA	73ABE 01
3.47			ITNA	84GLA 11
3.5	0.08		ITNA	75NAD 02
3.5	0.1		ITNA	78NAD 02
3.58	0.35		PAA	74CHA 01
3.6	0.08		OES	76WEW 01
3.6	0.3		ITNA	83NDI 01
3.6	0.3		PAA	76CHA 01
3.68	0.08		ITNA	76RAG 01
3.69	0.05		ITNA	78LAU 02
3.7			ITNA	78WEA 01
3.7	0.1		ITNA	75RIC 01
3.7	0.3		ITNA	75OND 01
3.75	0.24		ITNA	79ROS 03
3.8		11	ICPES	85HAR 01
3.8	0.05	D	NAA	79STE 01
3.8	0.05		ITNA	77ROW 03
3.8	0.05	D	ITNA	77ROW 04

Conc	Uncer	Com	Method	Reference
Sc (ug/g) cont.				
3.8	0.1	11	ICPES	85HAR 01
3.8	0.4		ITNA	76WEW 01
3.81	0.47		ITNA	75RUC 01
3.88	0.15		NAA	76HAN 01
3.9	0.2		ITNA	76KUC 01
3.95	0.06		IENA	77ROW 04
3.98	0.04		ITNA	78MAC 01
4	0.2		ITNA	79GRE 01
4.1		34	WXRF	82MIL 01
4.1			ITNA	75MIL 01
4.1	0.2		ITNA	81WAN 01
4.1	0.4		ITNA	85FIL 01
4.2	0.1		ITNA	77MAE 01
4.5			ITNA	75KLE 01
5.4	0.1		ITNA	82SUZ 02
Se (ug/g)				
1.1	0.08		CPXRF	80KIR 01
2			HAA	74BYR 02
2.3	0.2	9	ITNA	82SUZ 02
2.4	0.1		ITNA	78NAD 02
2.44	0.08		ITNA	75NAD 02
2.5	0.2		ITNA	80WAN 01
2.51	0.13	8	SSMS	80KOP 01
2.6	0.1	9	ITNA	82SUZ 02
2.6	0.16		FAA	77ARU 01
2.6	0.3	9	ITNA	80WAN 01
2.7	0.2		RTNA	74ORV 01
2.8			ITNA	77GLU 01
2.8	0.11		RTNA	75RUC 01
2.86	0.13		DCPES	81CAR 02
2.86	0.13		GCMES	75KLE 01
2.86	0.13		GCMES	74TAL 02
2.9	0.1		ICPES	80HAA 01
2.9	0.2		ITNA	79GRE 01
2.9	0.2		XRF	77ARU 01
2.9	0.4		ITNA	76RAG 01
2.99	0.07		SSMS	77PAU 01
3		34	WXRF	82MIL 01
3.0	0.3		PAA	76CHA 01
3.0	0.3	H	OES	80CLA 01
3.0	0.3	D	NAA	79STE 01
3.0	0.3	D	IENA	77ROW 04
3.0	0.3		IENA	77ROW 03
3.0	0.4		RTNA	80KNA 01
3.0	0.4	6	PAA	82SEG 01
3	1	6	PAA	82SEG 01
3	1		PAA	80SEG 01
3.03	0.28		PAA	74CHA 01
3.05			ITNA	75KLE 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference
Se (ug/g) cont.				
3.05	0.48		ASV	76AND 01
3.1			ITNA	78WEA 01
3.1	0.2		EXRF	79GIA 01
3.1	0.3		ITNA	85FIL 01
3.1	0.4		XRF	79FRU 01
3.1	0.6		ITNA	78MAC 01
3.1	1.6		ITNA	76WEW 01
3.2	0.3		ITNA	75RIC 01
3.2	0.4		ITNA	76BLO 01
3.3	0.2	9	ITNA	78LAU 02
3.3	0.3		ITNA	79FRU 01
3.3	0.4		ITNA	73ABE 01
3.3	0.6		ITNA	78LAU 02
3.4	0.2		ITNA	75OND 01
3.4	0.2	D	NAA	74OND 01
3.5	0.3		ITNA	77MAE 01
3.6	0.4		ITNA	75RUC 01
3.7			ITNA	84CLE 01
3.7	0.7		ITNA	77ROW 04
3.8	0.51		ITNA	73SHE 01
3.8	0.7		ITNA	77CAH 01
3.9	0.4		ITNA	81WAN 01
4.7			COLOR	74BYR 02
5.5	0.5		EXRF	73SPA 01
6	1		XRF	79PRA 01
Si (%)				
2.1	0.42		OES	76WEW 01
2.6		4	AA	79REI 01
2.68	0.2		ICPES	84NAD 01
2.95	0.06		TCGS	79FAI 01
2.95	0.06	D	TCGS	80AND 01
3.0	0.4		PAA	76CHA 01
3.12	0.37		ITNA	83NDI 01
3.14			ICPES	80NAD 01
3.17			ICPES	80NAD 01
3.19			ICPES	80NAD 01
3.19	0.1		XRF	79PRA 01
3.2			AA	76WEW 01
3.21			ICPES	80NAD 01
3.5	0.8		14NAA	76BLO 01
3.92			VV	77GLU 01

Conc	Uncer	Com	Method	Reference
Sm (ug/g)				
1.3	0.19		ITNA	73SHE 01
1.3	0.2		ICPES	81CHU 01
1.38	0.09		ITNA	77ROW 04
1.38	0.1		IENA	76STE 05
1.4			FAA	82GUP 02
1.4	0.1		IENA	77ROW 03
1.4	0.1		ITNA	78MAC 01
1.41	0.06	D	NAA	79STE 01
1.41	0.06		IENA	77ROW 04
1.53	0.02		TCGS	79FAI 01
1.53	0.02	D	TCGS	80AND 01
1.55	0.07		NAA	76HAN 01
1.6			ITNA	75MIL 01
1.6	0.2		ITNA	77CAH 01
1.66	0.16		ITNA	75NAD 02
1.7			ITNA	78WEA 01
1.7	0.2		ITNA	78NAD 02
1.7	0.2		ITNA	75OND 01
1.7	0.3		ITNA	73ABE 01
1.7	0.3		ITNA	84ODD 01
1.72	0.08		ITNA	76RAG 01
1.74	0.02		ITNA	78LAU 02
1.8	0.07		ITNA	85FIL 01
1.8	0.1		RTNA	84ODD 01
1.8	0.1		ITNA	75RUC 01
1.83	0.08		ITNA	83NDI 01
1.9	0.2		ITNA	79GRE 01
1.93	0.14		ITNA	77MAE 01
2.9	0.2		ITNA	82SUZ 02
Sn (ug/g)				
2	10	R	OES	76WEW 01
4	0.2		ICPES	80HAA 01
5		34	WXRF	82MIL 01
8			ICPES	80NAD 01
9.7			ICPES	80NAD 01
10			ITNA	77GLU 01
10	1		PAA	76CHA 01
10	1		PAA	80SEG 01
10	1	6	PAA	82SEG 01
10.2	1		PAA	74CHA 01
11	0.4	6	PAA	82SEG 01
125	20		ITNA	73SHE 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference
Sr (ug/g)				
1.02	0.05		ITNA	75NAD 02
1.33	0.1		PAA	74CHA 01
91	9	12	ITNA	82SUZ 02
93	7	12	ITNA	82SUZ 02
93	9.2		ITNA	73SHE 01
99		4	AA	79REI 01
112	26		ITNA	76RAG 01
120	20		NAA	76HAN 01
123			ITNA	75KLE 01
125	26		ITNA	78NAD 02
128	3		XRF	79PRA 01
129			ITNA	75MIL 01
131	23		ITNA	76STE 05
136	2	11	ICPES	85HAR 01
140	2.8		ICPES	81CHU 01
140	15		PAA	76CHA 01
140	40		ITNA	78LAU 02
142		11	ICPES	85HAR 01
144			XRF	75KLE 01
145	9		ITNA	75RUC 01
150	20		XRF	79FRU 01
151		34	WXRF	82MIL 01
151	4		EXRF	79GIA 01
155	6		ITNA	77CAH 01
155	15		EXRF	73SPA 01
159	14		IENA	77ROW 04
160	10		IENA	77ROW 03
161	9	D	NAA	79STE 01
161	9	5	IENA	76STE 05
161	16		ITNA	75OND 01
164	14		ITNA	77MAE 01
164	25		ITNA	81WAN 01
165	21	5	IENA	76STE 05
170	10		ITNA	73ABE 01
170	17		ITNA	76WEW 01
170	20		ITNA	78MAC 01
170	20	9	ITNA	78LAU 02
170	20		ITNA	79FRU 01
171	22		ITNA	85FIL 01
190			ITNA	77ROW 04
280	56		OES	76WEW 01

Conc	Uncer	Com	Method	Reference
Ta (ng/g)				
170			ITNA	75KLE 01
210		35	ITNA	81GLA 03
210	20		ITNA	77CAH 01
210	20		ITNA	75RUC 01
230	20		ITNA	76RAG 01
240			ITNA	78WEA 01
240	10		ITNA	75NAD 02
240	10		ITNA	78NAD 02
240	25		ITNA	85FIL 01
240	40		ITNA	75OND 01
250	10		ITNA	77MAE 01
250	30		NAA	76HAN 01
270	20		ITNA	79ROS 03
273	6		IENA	77ROW 03
273	6	D	NAA	79STE 01
273	9	D	IENA	77ROW 04
290	50		ITNA	78LAU 02
300			ITNA	77ROW 04
300			ITNA	75MIL 01
350	20		ITNA	82SUZ 02
360	28		ITNA	73SHE 01
460	50		ITNA	73ABE 01
Tb (ng/g)				
30			ITNA	73SHE 01
200	20		ITNA	76RAG 01
200	40		ITNA	76WEW 01
230	10		ITNA	78LAU 02
230	50		ITNA	75OND 01
230	60		ITNA	73ABE 01
260	20		ITNA	82SUZ 02
270	10	D	NAA	79STE 01
274	12		IENA	77ROW 03
274	12	D	IENA	77ROW 04
290	80		ITNA	85FIL 01
310	40		ITNA	84ODD 01
340	20		RTNA	84ODD 01
400	20		ITNA	78NAD 02
400	20		ITNA	75NAD 02
500			ITNA	75MIL 01
Te (ng/g)				
< 600		L	WXRF	82MIL 01
< 690		L	ITNA	82SUZ 02
< 1000		L	PAA	76CHA 01
500			FAA	77GLU 01
600	40	35	RTNA	75GLA 01
1020			PAA	74CHA 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference
Th (ug/g)				
1.28	0.06		ITNA	75NAD 02
1.3	0.1		ITNA	78NAD 02
2.4	0.2		ITNA	76BLO 01
2.7	0.7		EXRF	79GIA 01
2.87	0.09		ITNA	77ROW 04
2.87	0.24		ITNA	79ROS 03
2.9	0.1		ITNA	76RAG 01
2.9	0.2		ITNA	85FIL 01
3		34	WXRF	82MIL 01
3			ITNA	75KLE 01
3	0.2		ITNA	78LAU 02
3.1	0.2		ITNA	75OND 01
3.1	0.2		ITNA	73SHE 01
3.12	0.1	D	IENA	77ROW 04
3.12	0.1		IENA	77ROW 03
3.12	0.1	D	NAA	79STE 01
3.2		35	ITNA	81GLA 03
3.2			ITNA	75MIL 01
3.2	0.1		ITNA	77MAE 01
3.2	0.2		ITNA	79GRE 01
3.2	0.3		ITNA	76WEW 01
3.2	0.5		NAA	76HAN 01
3.3	0.6		ITNA	81WAN 01
3.4	0.3		ITNA	79FRU 01
3.4	0.6		ITNA	73ABE 01
3.45	0.1		GAMMA	73ABE 01
3.45	0.1		GAMMA	75OND 01
3.5	0.6		ITNA	77CAH 01
3.65	0.49		ITNA	75RUC 01
4.1	0.1	12	ITNA	82SUZ 02
4.6	0.1	12	ITNA	82SUZ 02
4.7			DNA	75MIL 01
Ti (ug/g)				
425	25		ICPES	84NAD 01
680			EXRF	82KEE 01
690		4	AA	79REI 01
790			POL	74MAI 01
800			AA	76WEW 01
800			ITNA	78WEA 01
810	20	11	ICPES	85HAR 01
839	172		ITNA	75NAD 02
840	200		ITNA	78NAD 02
860		11	ICPES	85HAR 01
885	150		ITNA	76BLO 01
890	35	D	TCGS	80AND 01
890	35		TCGS	79FAI 01
890	50	D	NAA	79STE 01
890	50		ITNA	76STE 05
890	50		ITNA	77ROW 03

Conc	Uncer	Com	Method	Reference
Ti (ug/g) cont.				
890	200		PAA	75OND 01
900	100		PAA	76CHA 01
900	180		OES	76WEW 01
920	50		NAA	76HAN 01
930		34	WXRF	82MIL 01
930			ICPES	80NAD 01
930			ITNA	75KLE 01
946	24		ICPES	81CHU 01
951	53		EXRF	79GIA 01
960			ICPES	80NAD 01
960			ICPES	80NAD 01
972			ICPES	80NAD 01
973	50		PAA	74CHA 01
980	60		ITNA	79GRE 01
995	100		ITNA	78MAC 01
1000	260		ITNA	76RAG 01
1028	30		AA	79ROS 03
1060		35	NAA	81GLA 03
1075	100		ITNA	75OND 01
1100			ITNA	77GLU 01
1100	100		ITNA	81WAN 01
1100	110		ITNA	76WEW 01
1100	200		ITNA	79FRU 01
1100	200		ITNA	73ABE 01
1160	50		XRF	79PRA 01
1200	200		ITNA	78LAU 02
1300	200		XRF	79FRU 01
1312	150		ITNA	73SHE 01
1550	130		ITNA	82SUZ 02
Tl (ng/g)				
500	100		PAA	80SEG 01
500	100	6	PAA	82SEG 01
512	60		PAA	74CHA 01
520	60		PAA	76CHA 01
590	60		SSMS	77PAU 01
600	100	6	PAA	82SEG 01
600	200		SSMS	77DON 01
610	37	8	SSMS	80KOP 01
Tm (ng/g)				
110			FAA	82GUP 02
300			ITNA	75MIL 01
300			ITNA	77GLU 01
300	20		RTNA	84ODD 01
300	40		ITNA	84ODD 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference
U (ug/g)				
0.98	0.078		ITNA	73SHE 01
1.1	0.08	35	RTNA	75GLA 01
1.19			DNA	85GAU 04
1.2	0.05		IDMS	78CAR 02
1.2	0.1		ITNA	78NAD 02
1.2	0.1		ITNA	75NAD 02
1.21			IDMS	75KLE 01
1.24	0.05		ITNA	76RAG 01
1.25	0.06		ITNA	82SUZ 02
1.26			ITNA	75KLE 01
1.3	0.1	6	PAA	82SEG 01
1.3	0.1		PAA	80SEG 01
1.33	0.05		DNA	84GLA 02
1.34	0.5		ITNA	78MAC 01
1.35			ITNA	78WEA 01
1.37	0.08		ITNA	74WEA 01
1.4			ITNA	81WAN 01
1.4	0.1	6	PAA	82SEG 01
1.4	0.4		ITNA	85FIL 01
1.41	0.07		GAMMA	73ABE 01
1.41	0.07		GAMMA	75OND 01
1.41	0.07	D	NAA	74OND 01
1.43			DNA	75MIL 01
1.45	0.04	D	NAA	79STE 01
1.45	0.04		IENA	77ROW 04
1.46	0.02		IENA	76STE 05
1.46	0.02	D	NAA	79STE 01
1.46	0.04		IENA	77ROW 03
1.46	0.35		ITNA	75RUC 01
1.49		35	DNA	81GLA 03
1.5			ITNA	75MIL 01
1.5	0.1	13	PAA	81SEG 01
1.52	0.11		ITNA	76STE 05
1.6	0.2	13	PAA	81SEG 01
1.6	0.2		NAA	76HAN 01
1.6	0.2		ITNA	79FRU 01
2		34	WXRF	82MIL 01
6			AA	76WEW 01
V (ug/g)				
24	8		EXRF	79GIA 01
30	6	35	ITNA	81GLA 03
31	4		ICPES	84NAD 01
31.5	2.6	11	AA	82LIN 03
32		34	WXRF	82MIL 01
32	1.3		OES	76WEW 01
32	4		ITNA	78LAU 02
32.5	1.5		NAA	76HAN 01
32.7	0.6	11	ICPES	85HAR 01
32.7	3.4		ITNA	75NAD 02

Conc	Uncer	Com	Method	Reference
V (ug/g) cont.				
32.9	1.7		ITNA	83NDI 01
33			ICPES	80NAD 01
33	1		ITNA	76BLO 01
33	3		ITNA	78NAD 02
33	3		ITNA	78MAC 01
33	4		ITNA	73ABE 01
33	6		ITNA	80BUA 01
33.6			AA	78GUI 01
33.9		11	ICPES	85HAR 01
33.9	3		PAA	74CHA 01
34			ITNA	84CLE 01
34			ICPES	80NAD 01
34	3		PAA	76CHA 01
35			ITNA	78WEA 01
35	2.9		ITNA	76STE 05
35	2.9	D	NAA	79STE 01
35	2.9		ITNA	77ROW 03
35	4		ITNA	79FRU 01
35.2	1.5		AA	79ROS 03
35.8	3.4		ITNA	81WAN 01
35.9	0.8	11	AA	82LIN 03
36			AA	76WEW 01
36	2		ITNA	79GRE 01
36	3		ITNA	75OND 01
36	3	D	NAA	74OND 01
36	4		ITNA	76WEW 01
36	4		ITNA	73SHE 01
36.2			FAA	78GUI 01
37	3		ITNA	75RIC 01
37.6	1.4		ITNA	77MAE 01
37.9	1.7	11	AA	82LIN 03
38	1.2		ICPES	81CHU 01
38	4		XRF	79FRU 01
40	3		ITNA	75KLE 01
41	10		ITNA	76RAG 01
42	2		ITNA	82SUZ 02
43		4	AA	79REI 01
50			ITNA	77GLU 01
50	10		XRF	79PRA 01
W (ng/g)				
450	90		ITNA	81WAN 01
630	60		ITNA	77MAE 01
650	150		ITNA	76RAG 01
710	70	D	NAA	79STE 01
710	70		IENA	77ROW 04
710	80		ITNA	82SUZ 02
740	300		ITNA	75RUC 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference
W (ng/g) cont.				
750			ITNA	78WEA 01
750	100		IENA	77ROW 03
750	170		ITNA	75OND 01
780	80		ITNA	79GRE 01
790	170		IENA	76STE 05
870	200		ITNA	77CAH 01
1900	800		ITNA	73SHE 01
Y (ug/g)				
6.6		11	ICPES	85HAR 01
7			AA	82GUP 02
7	1		XRF	79PRA 01
7.4		34	WXRF	82MIL 01
7.6	0.81		OES	76WEW 01
7.9	0.6		EXRF	79GIA 01
8			OES	82GUP 02
8.3	0.2	11	ICPES	85HAR 01
Yb (ng/g)				
550	40		ITNA	73SHE 01
550	80		ITNA	76WEW 01
670	20		ICPES	81CHU 01
690	40		ITNA	78NAD 02
690	40		ITNA	75NAD 02
700			AA	82GUP 02
700	100		ITNA	78LAU 02
700	100		ITNA	75OND 01
740	90		ITNA	77CAH 01
760	30		ITNA	76RAG 01
780	70		ITNA	75RUC 01
790	20		RTNA	84ODD 01
800			ITNA	75MIL 01
810	20		ITNA	77MAE 01
810	40		ITNA	84ODD 01
840	70	D	NAA	79STE 01
840	70	5	ITNA	77ROW 04
840	70		ITNA	77ROW 03
880	90	5	ITNA	77ROW 04
910	70		OES	76WEW 01
950	50		IENA	77ROW 04
1000	200		NAA	76HAN 01
1000	200		ITNA	78MAC 01
1030	80		ITNA	82SUZ 02
1200	200		ITNA	81WAN 01

Conc	Uncer	Com	Method	Reference
Zn (ug/g)				
21		11	ICPES	85HAR 01
30	10		ITNA	75OND 01
30	10	D	NAA	74OND 01
32	3		ITNA	75NAD 02
32	3		XRF	79FRU 01
32	3		ITNA	78NAD 02
32	8		SSMS	77DON 01
33	3	9	ITNA	78LAU 02
34			XRF	75KLE 01
34		4	AA	79REI 01
34			ITNA	78WEA 01
34	1		EXRF	81KIN 01
34	9		ITNA	77CAH 01
34	17		ITNA	76WEW 01
34.9	1.6	11	AA	82LIN 03
35	2	12	ITNA	82SUZ 02
35	5		ITNA	77JER 01
35.7	9.9		EXRF	79GIA 01
36			ICPES	80NAD 01
36	0.6		RTNA	74ORV 01
36	7	6	PAA	82SEG 01
36.6	1.4		EXRF	73SPA 01
36.9	1.1	11	AA	82LIN 03
37			AA	76WEW 01
37	3		PAA	76CHA 01
37	3		PAA	77JER 01
37	3		XRF	79PRA 01
37	3		ITNA	79FRU 01
37	6		IENA	77ROW 04
37	10		NAA	76HAN 01
37.2	17.4		ITNA	75RUC 01
37.5	2.8		PAA	74CHA 01
38		34	WXRF	82MIL 01
38	5		SSMS	77PAU 01
38.1	0.8		AF	75EPS 01
38.1	1.4		RTNA	77JER 01
38.4	0.9		AA	74RAI 01
38.4	1		AA	75EPS 01
38.5			AA	78GUI 01
39			ICPES	80NAD 01
39			EXRF	82KEE 01
39	1		FAA	74TAL 01
39	1	7	AA	73TAL 01
39	2	11	ICPES	85HAR 01
39	2	12	ITNA	82SUZ 02
39	3	6	PAA	82SEG 01
39	3		PAA	80SEG 01
39	6		ITNA	77ROW 03
39	6	D	NAA	79STE 01
39	6	D	ITNA	77ROW 04
40	1.2		ICPES	81CHU 01

TABLE 1632-2: INDIVIDUAL DATA FOR NBS SRM 1632 (cont.)

Conc	Uncer	Com	Method	Reference
Zn (ug/g) cont.				
40	2		ICPES	84NAD 01
40.8	4		ITNA	81WAN 01
42			ITNA	77GLU 01
43	2		ITNA	76RAG 01
45	17		OES	76WEW 01
50	10		ITNA	78LAU 02
52	4		ITNA	78MAC 01
58	7		ITNA	77MAE 01
Zr (ug/g)				
1.56	0.14		PAA	74CHA 01
16	2		PAA	76CHA 01
25	0.75		ICPES	81CHU 01
25	3		OES	76WEW 01
28	24		ITNA	76RAG 01
33	4		EXRF	79GIA 01
38		34	WXRF	82MIL 01
40	4	9	ITNA	78LAU 02
41			ITNA	75MIL 01
45			ITNA	75KLE 01
46			AA	76WEW 01
85	9	12	ITNA	82SUZ 02
90	10	12	ITNA	82SUZ 02

TABLE 1632A-1: COMPILED DATA FOR NBS SRM 1632A TRACE ELEMENTS IN COAL (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	AA Mean ± SD (n)	NAA Mean ± SD (n)	ICPES Mean ± SD (n)	XRF Mean ± SD (n)	OTHER METHODS Mean (n) Method	Mean (n) Method
ASH	%	---	21.84 ± 0.15 (5)	21.8	21.7 - 22.0	22.0 (1)	---	---	---	21.9 (2) CB	---
Ag	ng/g	---	300 (1)	---	---	---	300 (1)	---	---	---	---
Al	%	3.07	2.95 ± 0.10 (25)	2.97	2.74 - 3.10	2.92 ± 0.14 (5)	2.97 ± 0.08 (12)	2.98 ± 0.08 (4)	2.88 (2)	2.96 (2) TCGS	3.33 (1) CPAA
As	ug/g	9.3 ± 1.0	9.2 ± 0.5 (27)	9.21	7.6 - 10.2	9.3 ± 0.5 (10)	9.3 ± 0.7 (13)	8.88 (1)	7.8 (2)	9.9 (1) PAA	9.27 (1) AF
Au	ng/g	---	3.0 (1)	---	---	---	3.0 (1)	---	---	---	---
B	ug/g	---	53.2 ± 1.5 (7)	53	50.9 - 55	---	52 (1)	---	---	53.1 ± 1.5 (5) TCGS	55 (1) OES
Ba	ug/g	---	120 ± 15 (15)	120	97 - 150	---	122 ± 17 (11)	111 ± 9 (3)	125 (1)	---	---
Be	ug/g	---	1.61 ± 0.11 (5)	1.63	1.48 - 1.73	1.60 ± 0.11 (4)	---	---	---	1.7 (1) OES	---
Bi	ug/g	---	< 1	---	---	---	---	---	< 1	---	---
Br	ug/g	---	41 ± 2 (16)	42	38 - 44.9	---	41 ± 2 (14)	---	42 (1)	43 (1) ISE	---
C	%	---	64.4 ± 3.9 (5)	62.7	61.3 - 71	---	---	---	---	62.0 ± 0.7 (3) CB	68 (2) TCGS
C-Fixed	%	---	43 (1)	---	---	43 (1)	---	---	---	---	---
Ca	ug/g	---	2410 ± 170 (20)	2400	2100 - 2700	2400 ± 140 (4)	2430 ± 180 (9)	2470 ± 190 (4)	2300 (1)	2100 (1) PAA	2400 (1) TCGS
Cd	ng/g	170 ± 20	178 ± 23 (6)	170	150 - 210	170 ± 10 (3)	200 (1)	---	---	180 (2) TCGS	---
Ce	ug/g	30	29 ± 2 (16)	28.5	25.7 - 32	---	29 ± 2 (12)	29 (2)	28.8 (2)	---	---
Cl	ug/g	---	756 ± 30 (16)	766	700 - 800	---	771 ± 17 (7)	---	730 (2)	722 (2) IC	775 (2) TCGS
Cl	ug/g	---	---	---	---	---	---	---	---	770 (2) ISE	---
Co	ug/g	6.8	6.7 ± 0.4 (23)	6.6	5.86 - 7.5	6.8 ± 0.5 (5)	6.7 ± 0.5 (15)	6.6 (2)	6.0 (1)	---	---
Cr	ug/g	34.3 ± 1.5	34 ± 2 (27)	33.8	30 - 40	33 ± 4 (7)	34.0 ± 1.6 (14)	31.6 (2)	37 ± 3 (3)	31 (1) DCPES	39 (1) AE±AF
Cs	ug/g	2.4	2.3 ± 0.2 (13)	2.3	1.9 - 2.5	---	2.24 ± 0.20 (12)	---	2.5 (1)	---	---
Cu	ug/g	16.5 ± 1	15.9 ± 0.8 (18)	16	14 - 17.2	16.1 ± 0.7 (10)	15.4 (1)	17 ± 2 (4)	15.8 ± 1.2 (3)	14 (1) DCPES	---
Dy	ug/g	---	2.06 ± 0.14 (10)	2.11	1.83 - 2.2	---	2.05 ± 0.15 (9)	2.1 (1)	---	---	---
Er	ug/g	---	0.91 (1)	---	---	---	---	0.91 (1)	---	---	---
Eu	ng/g	540	520 ± 40 (15)	510	460 - 610	---	530 ± 40 (14)	490 (1)	---	---	---
F	ug/g	---	160 ± 50 (8)	176	84 - 210	---	---	---	---	140 ± 60 (4) ISE	210 (1) IC
F	ug/g	---	---	---	---	---	---	---	---	178 (1) SSMS	170 (2) CPAA
Fe	%	1.11 ± 0.02	1.11 ± 0.03 (28)	1.11	1.03 - 1.17	1.13 ± 0.04 (6)	1.11 ± 0.03 (15)	1.10 ± 0.02 (5)	1.07 (1)	1.14 (2) TCGS	---
Ga	ug/g	8.49	8.0 ± 0.4 (7)	8.0	7.2 - 8.5	8.2 (1)	8.0 ± 0.3 (4)	---	7.8 (2)	---	---
Gd	ug/g	---	2.6 ± 0.6 (6)	2.4	1.9 - 3.4	---	3.4 (1)	2.4 (1)	3.0 (1)	2.3 ± 0.6 (3) TCGS	---
Ge	ug/g	---	2.5 (1)	---	---	---	---	---	2.5 (1)	---	---
H	%	---	4.1 ± 0.4 (5)	4.17	3.68 - 4.59	---	---	---	---	4.31 ± 0.24 (3) CB	3.69 (2) TCGS
H2O-	%	---	2.2 ± 0.5 (5)	2.6	1.6 - 2.6	---	---	---	---	2.6 (2) MPOES	2.1 (2) GRAV
H2O-	%	---	---	---	---	---	---	---	---	1.62 (1) FD	---
Hf	ug/g	1.6	1.62 ± 0.15 (11)	1.65	1.43 - 1.9	---	1.62 ± 0.15 (11)	---	---	---	---
Hg	ng/g	130 ± 30	136 ± 19 (10)	129	118 - 170	136 ± 20 (5)	137 ± 22 (4)	---	---	134 (1) AF	---
Ho	ng/g	---	360 (2)	---	340 - 380	---	340 (1)	380 (1)	---	---	---
I	ug/g	---	1.80 ± 0.15 (4)	1.77	1.63 - 2.0	---	1.80 ± 0.15 (4)	---	---	---	---
In	ng/g	---	38 ± 2 (5)	36	36 - 40.5	---	38 ± 2 (5)	---	---	---	---
K	ug/g	---	4110 ± 200 (20)	4100	3700 - 4523.	4175 ± 50 (4)	4090 ± 200 (10)	4310 ± 370 (4)	3700 (1)	4150 (2) TCGS	---
K-40	pCi/g	---	2.7 (1)	---	---	---	---	---	---	2.7 (1) GAMMA	---
La	ug/g	---	15 ± 2 (18)	15	10.9 - 19	---	14 ± 3 (15)	15.1 ± 0.6 (3)	19 (1)	---	---
Li	ug/g	---	39 ± 6 (4)	36.2	35 - 47	36.2 (1)	---	37 (1)	---	35 (1) OES	47 (1) CPAA
Lu	ng/g	---	170 ± 15 (12)	174	134 - 190	---	176 ± 7 (10)	150 (1)	---	---	---
Mg	ug/g	---	1150 ± 225 (13)	1052	870 - 1714	1100 ± 150 (4)	1425 ± 125 (4)	980 ± 80 (4)	---	910 (1) DCPES	1714 (1) CPAA
Mn	ug/g	28 ± 2	29 ± 2 (29)	29	26 - 34	29.3 ± 1.8 (8)	29.8 ± 2.2 (12)	30 ± 3 (4)	24 (2)	29 (1) DCPES	29 (1) TCGS
Mn	ug/g	---	---	---	---	---	---	---	---	26 (1) AE±AF	28 (1) ESR

TABLE 1632A-1: COMPILED DATA FOR NBS SRM 1632A TRACE ELEMENTS IN COAL (cont.)

ELEMENT	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		XRF		OTHER METHODS					
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method	Mean	(n)	Method
Mo	ug/g	---	3.85	(2)	---	2 - 5.7	---		---		5.7	(1)	2.0	(1)	---			---		
N	%	---	1.25 ± 0.04	(7)	1.27	1.19 - 1.30	---		---		---		---		1.24	(2)	TCGS	1.28	(1)	POT
N	%	---	---		---	---	---		---		---		---		1.72	(1)	IC	1.19	(1)	CHEML
N	%	---	---		---	---	---		---		---		---		1.27	(1)	TITR	1.28	(2)	CB
Na	ug/g	---	828 ± 77	(25)	825	680 - 1000	840 ± 36	(3)	800 ± 80	(15)	856 ± 54	(4)	882	(2)	915	(1)	CPAA	---		
Nb	ug/g	---	4.0	(1)	---	---	---		---		---		4.0	(1)	---			---		
Nd	ug/g	---	12 ± 2	(8)	11.8	10 - 15.6	---		13 ± 2	(5)	13	(1)	11	(1)	11.8	(1)	TCGS	---		
Ni	ug/g	19.4 ± 1	18.5 ± 2.0	(21)	19	15.7 - 23	18.6 ± 1.5	(10)	21	(2)	17.3 ± 1.6	(4)	19 ± 3	(3)	26	(1)	PAA	19	(1)	AE±AF
Ni	ug/g	---	---		---	---	---		---		---		---		16	(1)	DCPES	---		
O	%	---	18.8 ± 0.8	(3)	18.4	18.31 - 19.8	---		---		---		---		18.8 ± 0.8	(3)	14NAA	---		
P	ug/g	---	250 ± 40	(6)	205	85 - 285	280	(1)	---		190 ± 90	(5)	240	(2)	---			---		
Pb	ug/g	12.4 ± 0.6	12.2 ± 1.4	(20)	12.1	8.3 - 15.3	12.4 ± 0.7	(11)	---		9.6 ± 2.5	(3)	13 ± 4	(4)	11.2	(1)	IDMS	12.9	(1)	POT
Pb	ug/g	---	---		---	---	---		---		---		---		12	(1)	DCPES	---		
Pb-210	pCi/g	---	0.58 ± 0.19	(3)	0.5	0.449 - 0.80	---		---		---		---		0.474	(2)	NM	0.80	(1)	GAMMA
Po-210	pCi/g	---	0.50	(1)	---	---	---		---		---		---		0.50	(1)	RAS	---		
Pr	ug/g	---	3.15	(2)	---	3.0 - 3.3	---		---		3.3	(1)	3.0	(1)	---			---		
Ra-226	pCi/g	---	0.41	(1)	---	---	---		---		---		---		0.41	(1)	GAMMA	---		
Rb	ug/g	31	30 ± 2	(13)	29	26.9 - 34	---		29.2 ± 1.6	(10)	---		31.5	(2)	29	(1)	PAA	---		
S	%	1.64	1.55 ± 0.05	(13)	1.57	1.48 - 1.62	---		1.5	(2)	---		1.54 ± 0.07	(4)	1.42	(2)	IC	1.59	(1)	CPAA
S	%	---	---		---	---	---		---		---		---		1.59	(2)	TCGS	1.58	(2)	CB
Sb	ng/g	580	600 ± 45	(16)	600	460 - 690	587 ± 23	(3)	600 ± 50	(13)	---		1000	(1)	---			---		
Sc	ug/g	6.3	6.3 ± 0.3	(17)	6.2	5.7 - 6.9	---		6.3 ± 0.3	(15)	5.7	(1)	5.8	(2)	---			---		
Se	ug/g	2.6 ± 0.7	2.7 ± 0.2	(19)	2.65	2.4 - 3.12	2.7 ± 0.2	(6)	2.8 ± 0.2	(10)	---		2.4	(1)	2.59	(1)	AF	2.55	(1)	FAAC
Si	%	---	5.87 ± 0.22	(9)	5.912	5.5 - 6.21	5.80 ± 0.37	(3)	---		5.89 ± 0.20	(3)	5.92	(1)	5.92	(2)	TCGS	---		
Sm	ug/g	---	2.4 ± 0.3	(16)	2.5	1.9 - 2.8	---		2.6 ± 0.2	(12)	2.6	(1)	2.0	(1)	2.1	(2)	TCGS	---		
Sn	ug/g	---	4 ± 4	(3)	2.3	1.0 - 8.08	5.19	(2)	---		---		1.0	(1)	---			---		
Sr	ug/g	---	85 ± 6	(10)	83.6	76.4 - 95.5	---		84 ± 6	(8)	72	(2)	90	(1)	---			---		
Ta	ng/g	---	420 ± 40	(8)	400	360 - 460	---		420 ± 40	(8)	---		---		---			---		
Tb	ng/g	---	311 ± 17	(9)	310	290 - 330	---		312 ± 18	(8)	300	(1)	---		---			---		
Te	ng/g	---	500	(1)	---	---	500	(1)	---		---		---		---			---		
Th	ug/g	4.5 ± 0.1	4.5 ± 0.2	(16)	4.48	4.2 - 5.0	---		4.49 ± 0.22	(14)	4.4	(1)	5.0	(1)	---			---		
Th-228	pCi/g	---	0.499	(1)	---	---	---		---		---		---		0.499	(1)	NM	---		
Th-230	pCi/g	---	0.452	(1)	---	---	---		---		---		---		0.452	(1)	NM	---		
Th-232	pCi/g	---	0.442	(2)	---	0.40 - 0.484	---		---		---		---		0.484	(1)	NM	0.400	(1)	GAMMA
Ti	ug/g	1750	1630 ± 130	(21)	1620	1310 - 1900	1760	(1)	1630 ± 70	(8)	1540 ± 160	(5)	1830 ± 280	(4)	1850	(2)	COLOR	1515	(2)	TCGS
Tl	ug/g	---	< 1		---	---	---		--		---		< 1		---			---		
Tm	ng/g	---	390	(2)	---	380 - 400	---		380	(1)	400	(1)	---		---			---		
U	ug/g	1.28 ± 0.02	1.26 ± 0.08	(23)	1.28	1.1 - 1.45	---		1.26 ± 0.08	(22)	1.3	(1)	1.0	(1)	---			---		
U-234	pCi/g	---	0.448	(1)	---	---	---		---		---		---		0.448	(1)	NM	---		
U-235	pCi/g	---	0.0228	(1)	---	---	---		---		---		---		0.0228	(1)	NM	---		
U-238	pCi/g	---	0.444	(1)	---	---	---		---		---		---		0.444	(1)	NM	---		
V	ug/g	44 ± 3	44 ± 2	(27)	44	39 - 49.6	44 ± 3	(10)	44 ± 3	(11)	42 ± 2	(3)	44.5	(2)	47	(2)	AE±AF	---		
W	ng/g	---	880 ± 90	(6)	790	780 - 1000	---		880 ± 90	(6)	---		---		---			---		
Y	ug/g	---	9.2 ± 0.8	(3)	9.5	8.3 - 9.7	---		---		9.0	(2)	9.5	(1)	---			---		
Yb	ug/g	---	1.08 ± 0.09	(11)	1.1	0.9 - 1.2	---		1.10 ± 0.08	(10)	0.9	(1)	---		---			---		
Zn	ug/g	28 ± 2	27.2 ± 1.4	(19)	27.6	24.3 - 30	26.8 ± 1.5	(9)	28.2 ± 2.3	(5)	27.7 ± 0.5	(3)	27.3 ± 1.2	(3)	---			---		
Zr	ug/g	---	53 ± 5	(3)	55	47 - 57	---		47	(1)	---		55	(1)	57	(1)	PAA	---		

TABLE 1632A-2: INDIVIDUAL DATA FOR NBS SRM 1632A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ag (ng/g)				
< 1500			ITNA	86GLA 01
< 3000		L	WXRF	82MIL 01
300			ITNA	79CAH 01
Al (%)				
2.74		34	AA	83BET 01
2.8	0.27		CPXRF	80KIR 01
2.81	0.02	34	AA	83BET 01
2.82	0.13		ITNA	83JER 01
2.86	0.03		ICPES	85HAR 01
2.9	0.05		TCGS	79AND 01
2.9	0.12		ITNA	82JER 01
2.9	0.3		ITNA	80GER 01
2.91	0.05		ITNA	86GLA 01
2.93	0.03		AA	82NAD 02
2.95	0.04		XRF	79CAH 01
2.96	0.14		ITNA	85SUN 01
2.97	0.04		IENA	85GLA 02
2.99	0.06		ITNA	83OBR 01
2.99	0.14		ITNA	84GLA 02
3	0.01		ICPES	84NAD 01
3	0.05		ICPES	82NAD 02
3	0.1		AA	83RAP 01
3.01	0.13		TCGS	79FAI 01
3.01	0.13	D	TCGS	80GER 01
3.01	0.13	D	TCGS	80AND 01
3.0576	0.0106		ICPES	85PEA 01
3.06	0.08		ITNA	85AKA 01
3.07	0.13		ITNA	80GAR 01
3.1			ITNA	84CLE 01
3.1	0.06		AA	82KAM 01
3.33			CPAA	83BIR 01
9.47			EXRF	82EBD 02
As (ug/g)				
6.4	2.1		CPXRF	80KIR 01
7.6		11	FAA	82EBD 02
8.3	1		ITNA	83JER 01
8.4		11	FAA	82EBD 02
8.7	0.2		ITNA	82JER 01
8.7	0.3		HAA	85LIN 02
8.88	1.22		ICPES	81NAD 01
9		11	FAA	82EBD 02
9	0.4		ITNA	80KOS 01
9	0.4		ITNA	81KUL 01
9	0.9		ITNA	84CHA 02
9.2		34	WXRF	82MIL 01
9.2	0.5		AA	83RAP 01
9.2	1.2		ITNA	84TU 01

Conc	Uncer	Com	Method	Reference
As (ug/g) cont.				
9.21	0.15		ITNA	86GLA 01
9.27			AF	82WIL 01
9.34			FAA	82WIL 01
9.4	1.3		ITNA	83OBR 01
9.4	1.3		ITNA	79CAH 01
9.5		11	HAA	82CRO 03
9.54	0.64		HAA	82NAD 01
9.6		11	FAA	82EBD 02
9.7	0.3		ITNA	85GAU 04
9.8		11	FAA	82EBD 02
9.8		11	HAA	82CRO 03
9.9	0.5		PAA	80GER 01
10.2	0.4		ITNA	81JIN 01
11	2		ITNA	80GER 01
11.1	1.3		ITNA	85SUN 01
ASH (%)				
21.7			UU	85SHI 01
21.7			UU	82EBD 02
21.8		34	CB	82MIL 01
22		11	AA	84NAK 01
22			CB	82KAM 01
Au (ng/g)				
< 8			ITNA	86GLA 01
< 50		L	ITNA	79CAH 01
3	1		ITNA	80KOS 01
B (ug/g)				
22	3		ICPES	81NAD 01
50.9	0.5		TCGS	79AND 01
52	19		ITNA	82SCH 05
52.7	1.8		TCGS	79FAI 01
53	2		TCGS	80AND 01
53	2	D	TCGS	80GER 01
54			TCGS	85GAU 04
55			OES	83MIL 01
55	4	35	TCGS	81GLA 04
Ba (ug/g)				
97	7		ITNA	84TU 01
100	13		ITNA	81JIN 01
102	1		ICPES	84NAD 01
102	6		ITNA	84SUZ 02
112	3		ICPES	85HAR 01
116	7	5	ITNA	80TOU 01
119	27		ITNA	85SUN 01

TABLE 1632A-2: INDIVIDUAL DATA FOR NBS SRM 1632A (cont.)

Conc	Uncer	Com	Method	Reference
Ba (ug/g) cont.				
120	10		ICPES	82NAD 02
122	11		ITNA	80GER 01
125		34	WXRF	82MIL 01
126	11		ITNA	82JER 01
132	7		ITNA	85AKA 01
136	16		ITNA	85GAU 04
138	20		ITNA	79CAH 01
150	26		ITNA	80GAR 01
170	15		ITNA	84CHA 02
Be (ug/g)				
1.48	0.08	11	AA	82LIN 03
1.53	0.04	11	AA	84NAK 01
1.63	0.1	11	AA	82LIN 03
1.7			OES	83MIL 01
1.73	0.15	11	AA	82LIN 03
Bi (ug/g)				
<	1	L	WXRF	82MIL 01
Br (ug/g)				
38	2		ITNA	83JER 01
38.3	4.9		ITNA	84CHA 02
39	3		ITNA	84SUZ 02
39.6	1.9		ITNA	83OBR 01
40	2		ITNA	84GLA 02
40	2.3		ITNA	82JER 01
41	4		ITNA	80GER 01
42		34	WXRF	82MIL 01
42	1		ITNA	86GLA 01
43			ISE	81NAD 01
43	0.6		ITNA	81JIN 01
43	7		ITNA	79CAH 01
43.1	1.1		ITNA	85SUN 01
44.5	2.7	5	IENA	79GLA 02
44.9	0.9	5	IENA	79GLA 02
50	4	5	ITNA	80TOU 01
60			ISE	83NAD 01
C (%)				
61.3		14	CB	85NAD 01
62.08	0.1	14	CB	85NAD 01
62.7	0.06		CB	80SCH 02
65	4		TCGS	79AND 01
71	4	D	TCGS	80AND 01
71	4		TCGS	79FAI 01
71	4	D	TCGS	80GER 01

Conc	Uncer	Com	Method	Reference
C-Fixed (%)				
43		11	AA	84NAK 01
Ca (ug/g)				
2100	100		PAA	80GER 01
2160	130		ITNA	82JER 01
2200	300		ITNA	84GLA 02
2240	30		ICPES	85HAR 01
2300	30		AA	82NAD 02
2300	100		XRF	79CAH 01
2300	200		AA	82KAM 01
2340	270		ITNA	85SUN 01
2400	30		ICPES	82NAD 02
2400	100	34	AA	83BET 01
2400	200	D	TCGS	80AND 01
2400	200	D	TCGS	79AND 01
2400	200	D	TCGS	80GER 01
2400	200		ITNA	80GER 01
2400	200		TCGS	79FAI 01
2450	140		ITNA	83OBR 01
2600		34	AA	83BET 01
2600			ITNA	84CLE 01
2600	100		ICPES	84NAD 01
2600	200		ITNA	85AKA 01
2652.65			ICPES	85PEA 01
2700	175		ITNA	80GAR 01
46500			EXRF	82EBD 02
Cd (ng/g)				
150	30		TCGS	79AND 01
160		34	FAA	83BET 01
170	60	34	FAA	83BET 01
180	40		AA	83RAP 01
200	50		ITNA	80KOS 01
210	30		TCGS	79FAI 01
210	30	D	TCGS	80GER 01
210	30	D	TCGS	80AND 01
Ce (ug/g)				
25.7	7.2		CPXRF	80KIR 01
26	1.7		ITNA	79CAH 01
26	3		ITNA	85AKA 01
27	4		ITNA	81KUL 01
27	4		ITNA	80KOS 01
28	2		ITNA	84SUZ 02
28.5	0.3		ITNA	81JIN 01
28.5	0.4		ICPES	82CRO 01
29.7	0.9		ICPES	83MAH 05
30			ITNA	85GRE 02

TABLE 1632A-2: INDIVIDUAL DATA FOR NBS SRM 1632A (cont.)

Conc	Uncer	Com	Method	Reference
Ce (ug/g) cont.				
30.2	1.2		ITNA	85SUN 01
30.8	0.5		ITNA	84TU 01
31.1	3.4		ITNA	80GAR 01
31.8	1.5		ITNA	85GAU 04
32		34	WXRF	82MIL 01
32	4		ITNA	80GER 01
Cl (ug/g)				
700	10		IC	85GEN 01
700	100		XRF	79CAH 01
704	42		ITNA	85SUN 01
743	46		IC	83NAD 01
750	15		ITNA	86GLA 01
750	60		ITNA	84GLA 02
760		34	WXRF	82MIL 01
766	30		TCGS	79AND 01
770			ISE	83NAD 01
770	24		ITNA	82JER 01
770	48		ISE	81NAD 01
776	20		ITNA	83JER 01
776	36		ITNA	83OBR 01
784	17		TCGS	79FAI 01
784	17	D	TCGS	80GER 01
784	17	D	TCGS	80AND 01
800	70		ITNA	80GER 01
897	23		ITNA	80GAR 01
Co (ug/g)				
4.4	0.3		ICPES	85HAR 01
5.86	0.21		ITNA	81JIN 01
6		34	WXRF	82MIL 01
6.1	0.1		ITNA	84TU 01
6.1	0.4		ITNA	84SUZ 02
6.3	1.3	34	FAA	83BET 01
6.4	0.6		AA	83RAP 01
6.5			ICPES	81MER 03
6.5	0.2		ITNA	80GER 01
6.5	0.5		ITNA	81KUL 01
6.56	0.22		ITNA	85GAU 04
6.6	0.3		ITNA	86GLA 01
6.6	0.5	5	ITNA	80TOU 01
6.6	1.1		ITNA	80GAR 01
6.7	0.1		ICPES	83MAH 05
6.7	0.9	11	AA	84NAK 01
6.71	0.11		ITNA	85SUN 01
6.8	0.3		ITNA	80KOS 01
7	0.4		ITNA	85AKA 01
7.1	0.5		ITNA	84CHA 02
7.3		34	FAA	83BET 01

Conc	Uncer	Com	Method	Reference
Co (ug/g) cont.				
7.3	1.3	11	AA	84NAK 01
7.5			ITNA	84CLE 01
7.5	0.4		ITNA	79CAH 01
8.5	1		ITNA	83JER 01
Cr (ug/g)				
3.4	0.2		AA	83RAP 01
12.8	2		ICPES	84NAD 01
26	2	11	AA	84NAK 01
26	3		ITNA	81KUL 01
26	6		ITNA	80KOS 01
30	2		ICPES	85HAR 01
30.9	0.6		ITNA	84TU 01
31			DCPES	85MCC 02
31.2	3.7		ITNA	84CHA 02
31.8	3.7	11	AA	82LIN 03
32	1.9		AA	82KAM 01
33	3		ITNA	85AKA 01
33.3			ICPES	81MER 03
33.3	1.6		ITNA	81JIN 01
33.4	1.5		ITNA	85SUN 01
33.8		34	FAA	83BET 01
33.8	2		ITNA	83JER 01
34	2		ITNA	80GER 01
34	3.6		ITNA	82JER 01
34	4		XRF	85HAR 01
34.4	2.4		ITNA	84SUZ 02
34.7	2		ITNA	86GLA 01
34.8	6	34	FAA	83BET 01
35			ITNA	84CLE 01
35.6	1		ITNA	85GAU 04
36	2		ITNA	79CAH 01
36	3.5		CPXRF	80KIR 01
36	6		ITNA	80GAR 01
36.9	1	11	AA	84NAK 01
36.9	3.3	11	AA	82LIN 03
39	8.8		AE+AF	82GOL 01
40		34	WXRF	82MIL 01
Cs (ug/g)				
1.9	0.6		ITNA	79CAH 01
2	0.3		ITNA	80GER 01
2	0.32		ITNA	84CHA 02
2.12	0.13		ITNA	84GIB 01
2.2	0.1		ITNA	85AKA 01
2.27	0.15		ITNA	85GAU 04
2.3	0.11		ITNA	81JIN 01
2.33	0.07		ITNA	85SUN 01
2.4	0.2		ITNA	81KUL 01

TABLE 1632A-2: INDIVIDUAL DATA FOR NBS SRM 1632A (cont.)

Conc	Uncer	Com	Method	Reference
Cs (ug/g) cont.				
2.4	0.8		ITNA	80GAR 01
2.47	0.12		ITNA	84TU 01
2.5		34	WXRF	82MIL 01
2.5	0.2		IENA	80KOS 01
2.9	1.4		ITNA	84SUZ 02
Cu (ug/g)				
14			DCPES	85MCC 02
14.5	0.5		XRF	85HAR 01
15	0.45		AA	82KAM 01
15.3	0.9	11	AA	84NAK 01
15.4	1.9		ITNA	84SUZ 02
15.5	0.7		ICPES	85HAR 01
15.7	1.6	11	AA	84NAK 01
15.8	0.6	11	AA	82LIN 03
15.9	0.4		AA	79CAH 01
16	2.1		CPXRF	80KIR 01
16.1	0.6		AA	83RAP 01
16.3		34	FAA	83BET 01
16.3	0.2		ICPES	83MAH 05
16.4			ICPES	81MER 03
16.6	0.6	11	AA	82LIN 03
16.7	2	34	FAA	83BET 01
17		34	WXRF	82MIL 01
17.2	3		FAA	80LAN 01
19.8	1.5		ICPES	84NAD 01
Dy (ug/g)				
<	2.5	L	WXRF	82MIL 01
1.83	0.11		ITNA	83OBR 01
1.98	0.53	5	ITNA	80TOU 01
2	0.1		ITNA	82JER 01
2.1	0.1		ICPES	82CRO 01
2.11	0.11		ITNA	86GLA 01
2.13	0.15		ITNA	85SUN 01
2.2	0.1		ITNA	79CAH 01
2.2	0.1		ITNA	84SUZ 02
2.2	0.3		ITNA	80GER 01
2.56	0.26		ITNA	80GAR 01
Er (ug/g)				
<	3	L	WXRF	82MIL 01
0.91	0.05		ICPES	82CRO 01

Conc	Uncer	Com	Method	Reference
Eu (ng/g)				
410	50		ITNA	85AKA 01
460	20		ITNA	83OBR 01
490	10		ICPES	82CRO 01
490	50		ITNA	84CHA 02
500	40		ITNA	84SUZ 02
510	30		ITNA	81JIN 01
510	70		ITNA	86GLA 01
510	82		ITNA	80GAR 01
540	40		ITNA	85GAU 04
540	80		ITNA	80KOS 01
540	80		ITNA	81KUL 01
550	30		ITNA	79CAH 01
550	30		ITNA	80GER 01
600			ITNA	85GRE 02
610	30		ITNA	85SUN 01
F (ug/g)				
84	8		ISE	81NAD 01
95			ISE	83KNA 01
164			CPAA	83BIR 01
176	14		CPAA	85CLA 02
177			ISE	82MCG 01
178			SSMS	85CLA 02
200			ISE	83NAD 01
210	10		IC	83NAD 01
Fe (%)				
0.89	0.03		ICPES	84NAD 01
1.00			ITNA	84CLE 01
1.03	0.14		ITNA	84CHA 02
1.07	0.01		ICPES	85HAR 01
1.07	0.03		XRF	79CAH 01
1.08	0.02		ITNA	83JER 01
1.08	0.08	34	AA	83BET 01
1.09	0.08		ITNA	84SUZ 02
1.10		34	AA	83BET 01
1.10	0.02		ITNA	81JIN 01
1.10	0.02		ICPES	83MAH 05
1.10	0.06		ITNA	81KUL 01
1.10	0.1		ITNA	85AKA 01
1.10	0.3		ITNA	82JER 01
1.104	0.01		ITNA	84TU 01
1.11	0.02		AA	82NAD 02
1.11	0.06	D	TCGS	80AND 01
1.11	0.06		TCGS	79FAI 01
1.11	0.06	D	TCGS	80GER 01
1.1114	0.028		ICPES	85PEA 01
1.12	0.01		ICPES	82NAD 02
1.12	0.01		ITNA	80KOS 01

TABLE 1632A-2: INDIVIDUAL DATA FOR NBS SRM 1632A (cont.)

Conc	Uncer	Com	Method	Reference
Fe (%) cont.				
1.12	0.09		ITNA	80GAR 01
1.125			ICPES	81MER 03
1.13	0.02		ITNA	85SUN 01
1.14	0.01		AA	79CAH 01
1.14	0.04		ITNA	85GAU 04
1.14	0.05		ITNA	86GLA 01
1.16	0.03		ITNA	80GER 01
1.16	0.37		ITNA	79CAH 01
1.17	0.04		AA	83RAP 01
1.17	0.04		TCGS	79AND 01
1.2	0.02		AA	82KAM 01
6.78			EXRF	82EBD 02
Ga (ug/g)				
7.2	2.5		CPXRF	80KIR 01
7.84	0.6		ITNA	83OBR 01
8	0.8		ITNA	80GER 01
8.2			FAA	85XIA 01
8.4		34	WXRF	82MIL 01
8.5	0.8		ITNA	79CAH 01
Gd (ug/g)				
1.9	0.2		TCGS	79AND 01
1.95	0.03	D	TCGS	80GER 01
1.95	0.03		TCGS	79FAI 01
2.4	0.2		ICPES	82CRO 01
3		34	WXRF	82MIL 01
3	0.05		TCGS	80AND 01
3.4	0.3		ITNA	84SUZ 02
Ge (ug/g)				
2.5		34	WXRF	82MIL 01
H (%)				
3.68	0.07		TCGS	79AND 01
3.7	0.1		TCGS	79FAI 01
3.7	0.1	D	TCGS	80AND 01
3.7	0.1	D	TCGS	80GER 01
4.17		14	CB	85NAD 01
4.17	0.01		CB	80SCH 02
4.59	0.07	14	CB	85NAD 01
H2O- (%)				
1.6			GRAV	85LIN 02
1.62			FD	80KHA 02
2.6	0.1		GRAV	85HAN 01
2.6	0.1	2	MPOES	85HAN 01
2.6	0.1	2	MPOES	85HAN 01

Conc	Uncer	Com	Method	Reference
Hf (ug/g)				
1.43	0.05		ITNA	84TU 01
1.44	0.09		ITNA	81JIN 01
1.46	0.07		ITNA	85SUN 01
1.55	0.08		ITNA	80GER 01
1.55	0.11		ITNA	84SUZ 02
1.65	0.15		ITNA	85GAU 04
1.68	0.06		ITNA	86GLA 01
1.7	0.1		ITNA	79CAH 01
1.7	0.2		ITNA	85AKA 01
1.8	0.3		ITNA	80GAR 01
1.9	0.3	5	ITNA	80TOU 01
Hg (ng/g)				
90	15		ITNA	84CHA 02
118	14		CVAA	80NAD 01
120	50		ITNA	80KOS 01
122	6		CVAA	85DUM 02
129	10		RTNA	84DRA 01
129	20		RTNA	84DEL 01
134.1			AF	82WIL 01
134.1	3.1		CVAA	82EBD 01
135	18		CVAA	82DOO 01
169	65		ITNA	84SUZ 02
170	20		CVAA	81NAD 01
210	90		ITNA	81KUL 01
Ho (ng/g)				
<	2000	L	WXRF	82MIL 01
340	110		ITNA	84SUZ 02
380	50		ICPES	82CRO 01
I (ug/g)				
0.9		34	WXRF	82MIL 01
1.63			ITNA	85SUN 01
1.77			IENA	84GLA 02
1.8	0.2		ITNA	80GER 01
2	0.3		ITNA	84SUZ 02
In (ng/g)				
36	3		ITNA	83OBR 01
36	4		ITNA	80GER 01
40	10		ITNA	79CAH 01
40.5	5		ITNA	84CHA 02

TABLE 1632A-2: INDIVIDUAL DATA FOR NBS SRM 1632A (cont.)

Conc	Uncer	Com	Method	Reference
K (ug/g)				
3400	100		ITNA	83JER 01
3700			XRF	79CAH 01
3800	50		ITNA	83OBR 01
3900	100		ICPES	84NAD 01
4000	200		ITNA	81JIN 01
4000	900		ITNA	84CHA 02
4100	80		AA	82KAM 01
4100	100		TCGS	79AND 01
4100	200		ICPES	82NAD 02
4100	500		ITNA	86GLA 01
4120	50		ITNA	85SUN 01
4200		34	AA	83BET 01
4200	150		AA	82NAD 02
4200	200	D	TCGS	80GER 01
4200	200		TCGS	79FAI 01
4200	200	D	TCGS	80AND 01
4200	200		ITNA	79CAH 01
4200	200		ITNA	80GER 01
4200	400	34	AA	83BET 01
4300	645		ITNA	80GAR 01
4400	300		ITNA	85AKA 01
4523.5	166		ICPES	85PEA 01
4700	300		ICPES	85HAR 01
14900			EXRF	82EBD 02
K-40 (pCi/g)				
2.7	0.2		GAMMA	84ROS 03
La (ug/g)				
8.88	0.74		ITNA	84CHA 02
10.9	0.5		ITNA	80KOS 01
11.4	0.6		ITNA	84SUZ 02
12.8	0.5		ITNA	83OBR 01
13.03	0.3		ITNA	81JIN 01
14.2	0.1		ITNA	86GLA 01
14.5	0.2		ICPES	82CRO 01
15			ITNA	85GRE 02
15	2.6		ITNA	80GAR 01
15.1	1.2		ITNA	79CAH 01
15.2	0.8		ICPES	83MAH 05
15.4	0.6		ITNA	85SUN 01
15.6	0.4		ICPES	85HAR 01
15.9	0.6		ITNA	85GAU 04
17	1		ITNA	85AKA 01
18	2		ITNA	80GER 01
19		34	WXRF	82MIL 01
19	2		ITNA	83JER 01
21	1		ITNA	82JER 01

Conc	Uncer	Com	Method	Reference
Li (ug/g)				
35			OES	83MIL 01
36.2	0.1		AA	79CAH 01
37	1		ICPES	84NAD 01
47			CPAA	83BIR 01
Lu (ng/g)				
134	13		ITNA	80KOS 01
150	10		ICPES	82CRO 01
163	10		ITNA	84CHA 02
170	20		ITNA	85SUN 01
170	30		ITNA	85AKA 01
173	12		ITNA	86GLA 01
174	24		ITNA	84SUZ 02
177	10		ITNA	85GAU 04
180			ITNA	85GRE 02
180	30		ITNA	80GER 01
180	70		ITNA	80GAR 01
190	20		ITNA	81JIN 01
220	40		ITNA	79CAH 01
Mg (ug/g)				
600	300		XRF	79CAH 01
870	10		ICPES	84NAD 01
910			DCPES	85MCC 02
980	40		ICPES	85HAR 01
990	30		AA	82KAM 01
990	40		AA	82NAD 02
1020	10		ICPES	82NAD 02
1052			ICPES	85PEA 01
1100	100	34	AA	83BET 01
1300		34	AA	83BET 01
1300	300		ITNA	80GER 01
1400	100		IENA	85GLA 02
1400	220		ITNA	80GAR 01
1600	700		ITNA	85AKA 01
1714			CPAA	83BIR 01
19900			EXRF	82EBD 02
Mn (ug/g)				
20	4.3		CPXRF	80KIR 01
23			ITNA	84CLE 01
26	2	34	FAA	83BET 01
26	6		AE+AF	82GOL 01
27	2		ITNA	83JER 01
27.1	0.4		ICPES	83MAH 05
27.3	1.4		ITNA	82JER 01
27.4	2.5		ITNA	84CHA 02
28			ESR	85SHI 01

TABLE 1632A-2: INDIVIDUAL DATA FOR NBS SRM 1632A (cont.)

Conc	Uncer	Com	Method	Reference
S (%)				
0.09			ICPES	85PEA 01
1.19	0.01		XRF	79CAH 01
1.37	0.01		IC	83NAD 01
1.48			XRF	83NAD 01
1.48	0.003		IC	85GEN 01
1.48	0.07		XRF	81NAD 01
1.5	0.7		ITNA	82JER 01
1.5	0.7		NAA	81HO 02
1.57	0.01		CB	86GAU 01
1.58	0.02		CB	85GLA 03
1.59	0.02	D	TCGS	80AND 01
1.59	0.02	D	TCGS	80GER 01
1.59	0.02		TCGS	79FAI 01
1.59	0.03		CPAA	84LAN 02
1.59	0.09		TCGS	79AND 01
1.6	0.02		XRF	84WEB 01
1.6	0.07		CPXRF	80KIR 01
1.62			UU	82EBD 02
Sb (ng/g)				
410	150		HAA	82NAD 01
460			ITNA	84GIB 01
520	30		ITNA	82JER 01
530	50		ITNA	81KUL 01
530	50		ITNA	80KOS 01
560	40		AA	83RAP 01
580	40		ITNA	86GLA 01
600		11	HAA	82CRO 03
600			ITNA	84CLE 01
600		11	HAA	82CRO 03
600	90		ITNA	80GER 01
620	20		ITNA	83JER 01
620	50		ITNA	84TU 01
620	80		ITNA	81JIN 01
630	60		ITNA	84CHA 02
640	150		ITNA	85SUN 01
650	90		ITNA	85GAU 04
690	50	5	ITNA	80TOU 01
800	50		ITNA	79CAH 01
1000		34	WXRF	82MIL 01
Sc (ug/g)				
5.3	1.2		CPXRF	80KIR 01
5.7	0.2		ICPES	85HAR 01
5.9	0.2		ITNA	82JER 01
6	0.3		ITNA	81KUL 01
6.06	0.11		ITNA	85SUN 01
6.1	0.4		ITNA	85AKA 01
6.14	0.2		ITNA	85GAU 04

Conc	Uncer	Com	Method	Reference
Sc (ug/g) cont.				
6.2		34	WXRF	82MIL 01
6.2	0.2		ITNA	79CAH 01
6.2	0.3		ITNA	86GLA 01
6.3	0.1		ITNA	80KOS 01
6.3	0.2	5	ITNA	80TOU 01
6.4	0.2		ITNA	83JER 01
6.42	0.25		ITNA	84CHA 02
6.56	0.23		ITNA	80GAR 01
6.7	0.05		ITNA	81JIN 01
6.8	0.6		ITNA	80GER 01
6.9	0.9	5	ITNA	80TOU 01
Se (ug/g)				
1.9	0.5		ITNA	86GLA 01
2.4		34	WXRF	82MIL 01
2.4	0.2		AA	83RAP 01
2.4	0.3		RTNA	80KNA 01
2.54	0.45		ITNA	84CHA 02
2.55	0.29		FAAC	85WOO 01
2.57	0.05		IENA	80KOS 01
2.58			FAA	82WIL 01
2.59			AF	82WIL 01
2.6	0.3		ITNA	80GER 01
2.65	0.02	7	HAA	84IMA 01
2.65	0.1	D	HAA	84IMA 03
2.69	0.4		RTNA	84DEL 01
2.7	0.3		HAA	85LIN 01
2.7	0.3		HAA	85LIN 02
2.7	0.4		ITNA	84SUZ 02
2.9	0.2		ITNA	85AKA 01
3	0.1		ITNA	79CAH 01
3	0.4		ITNA	84TU 01
3.1			ITNA	84CLE 01
3.12	0.17		HAA	82NAD 01
3.62	0.52		ITNA	85SUN 01
Si (%)				
3.1	0.14		CPXRF	80KIR 01
5.5	0.4	34	AA	83BET 01
5.68	0.01		ICPES	84NAD 01
5.7		34	AA	83BET 01
5.8	0.1	D	TCGS	80AND 01
5.8	0.1		TCGS	79FAI 01
5.8	0.1	D	TCGS	80GER 01
5.9122	0.0187		ICPES	85PEA 01
5.92	0.01		XRF	79CAH 01
6.05	0.2		TCGS	79AND 01
6.09	0.07		ICPES	82NAD 02
6.21	0.08		AA	82NAD 02
27.79			EXRF	82EBD 02

TABLE 1632A-2: INDIVIDUAL DATA FOR NBS SRM 1632A (cont.)

Conc	Uncer	Com	Method	Reference
Sm (ug/g)				
1.1	0.1		ITNA	80KOS 01
1.9	0.1	5	ITNA	80TOU 01
2		34	WXRF	82MIL 01
2.1	0.05		TCGS	79AND 01
2.1	0.07		TCGS	79FAI 01
2.1	0.07	D	TCGS	80AND 01
2.1	0.07	D	TCGS	80GER 01
2.2	0.1		ITNA	85AKA 01
2.28	0.08		ITNA	85GAU 04
2.4			ITNA	85GRE 02
2.4	0.05		ITNA	85SUN 01
2.5	0.4		ITNA	80GAR 01
2.57	0.09		ITNA	81JIN 01
2.6	0.1		ITNA	79CAH 01
2.6	0.1		ICPES	82CRO 01
2.62	0.13		ITNA	83OBR 01
2.7	2		ITNA	83JER 01
2.8	0.3		ITNA	80GER 01
3.1	0.3		ITNA	84SUZ 02
Sn (ug/g)				
1		34	WXRF	82MIL 01
2.3			FAA	84LON 01
8.08	1.02		HAA	82NAD 01
84.2	2.6		ITNA	85SUN 01
Sr (ug/g)				
60	1		ICPES	84NAD 01
76.4	12.8		ITNA	85SUN 01
79	9		ITNA	82JER 01
80	11		ITNA	84TU 01
83.6	7.8		ITNA	83OBR 01
84	2		ICPES	85HAR 01
84	9		ITNA	80GER 01
90		34	WXRF	82MIL 01
91	18		ITNA	79CAH 01
95.5	11.8		ITNA	81JIN 01
Ta (ng/g)				
290	50		ITNA	84CHA 02
360	10		ITNA	84SUZ 02
390	50		ITNA	85GAU 04
390	50		ITNA	79CAH 01
400	30		ITNA	80GER 01
450	40		ITNA	85SUN 01
450	50		ITNA	81JIN 01
460	30		ITNA	84TU 01
460	90		ITNA	85AKA 01

Conc	Uncer	Com	Method	Reference
Tb (ng/g)				
290	30		ITNA	81JIN 01
290	60		ITNA	86GLA 01
300			ITNA	85GRE 02
300	100		ICPES	82CRO 01
310	30		ITNA	84SUZ 02
320	50		ITNA	80GER 01
330	40		ITNA	79CAH 01
330	40		ITNA	85SUN 01
330	120		ITNA	84CHA 02
Te (ng/g)				
<	600	L	WXRF	82MIL 01
<	830		ITNA	84SUZ 02
500	50		HAA	82NAD 01
Th (ug/g)				
3.1	0.5		CPXRF	80KIR 01
3.77	0.38		ITNA	84CHA 02
4.2	0.2	5	ITNA	80TOU 01
4.2	0.3		ITNA	79CAH 01
4.3			ITNA	82JER 01
4.3	0.3		ITNA	80KOS 01
4.3	0.9		ITNA	81KUL 01
4.4	0.1		ICPES	83MAH 05
4.4	0.5		ITNA	84SUZ 02
4.48	0.04		ITNA	81JIN 01
4.5	0.02		IENA	85BEL 01
4.5	0.3		ITNA	85AKA 01
4.6	0.2		ITNA	86GLA 01
4.63	0.07		ITNA	85SUN 01
4.8	0.2		ITNA	80GER 01
4.8	0.6		ITNA	80GAR 01
4.81	0.17		ITNA	85GAU 04
5		34	WXRF	82MIL 01
Th-228 (pCi/g)				
0.499	0.011	D	NM	81CAS 01
0.499	0.011		NM	80CAS 01
Th-230 (pCi/g)				
0.452	0.017		NM	80CAS 01
0.452	0.017	D	NM	81CAS 01
Th-232 (pCi/g)				
0.40	0.07		GAMMA	84ROS 03
0.484	0.018		NM	80CAS 01
0.484	0.018	D	NM	81CAS 01

TABLE 1632A-2: INDIVIDUAL DATA FOR NBS SRM 1632A (cont.)

Conc	Uncer	Com	Method	Reference
Ti (ug/g)				
592	30		ICPES	84NAD 01
1310	20		ICPES	85HAR 01
1437.6	119.8		ICPES	85PEA 01
1480	30		TCGS	79AND 01
1550	40	D	TCGS	80GER 01
1550	40	D	TCGS	80AND 01
1550	40		TCGS	79FAI 01
1560	70		ITNA	83JER 01
1570	100		ITNA	86GLA 01
1580	80		ITNA	82JER 01
1600		34	WXRF	82MIL 01
1600	40		ICPES	82NAD 02
1620	45		ITNA	83OBR 01
1630			ICPES	81MER 03
1630	70		ITNA	80GER 01
1700	50		ICPES	83MAH 05
1700	300		CPXRF	80KIR 01
1720	170		ITNA	80GAR 01
1756	128		ITNA	85SUN 01
1760			AA	82NAD 02
1800	100		XRF	79CAH 01
1800	300	34	COLOR	83BET 01
1900		34	COLOR	83BET 01
2230			WXRF	83GAR 01
5990			EXRF	82EBD 02
Tl (ug/g)				
<	1	L	WXRF	82MIL 01
Tm (ng/g)				
<	1000	L	WXRF	82MIL 01
380	40		ITNA	84SUZ 02
400	100		ICPES	82CRO 01
U (ug/g)				
1		34	WXRF	82MIL 01
1.1	0.2		ITNA	79CAH 01
1.12	0.4		ITNA	81KUL 01
1.14	0.07		ITNA	84SUZ 02
1.16	0.11		ITNA	81JIN 01
1.2	0.1	5	ITNA	80TOU 01
1.21	0.1		ITNA	80GER 01
1.22	0.1		ITNA	83JER 01
1.24	0.04		IENA	80KOS 01
1.24	0.1		IENA	81KUL 02
1.26	0.08		DNA	84GLA 02
1.28	0.02		IENA	85BEL 01
1.28	0.08		DNA	80GAR 01

Conc	Uncer	Com	Method	Reference
U (ug/g) cont.				
1.29	0.04		DNA	85GAU 04
1.29	0.07		DNA	86GLA 01
1.3	0.02		ICPES	83MAH 05
1.3	0.1	35	DNA	81GLA 04
1.3	0.11		ITNA	83OBR 01
1.3	0.12		ITNA	85SUN 01
1.31	0.09		ITNA	82JER 01
1.33	0.04		DNA	86GAU 01
1.4			DNA	84GLA 11
1.45	0.05	35	DNA	81GLA 03
1.5	0.13		ITNA	84CHA 02
U-234 (pCi/g)				
0.448	0.012	D	NM	81CAS 01
0.448	0.012		NM	80CAS 01
U-235 (fCi/g)				
22.8	1.9	D	NM	81CAS 01
22.8	1.9		NM	80CAS 01
U-238 (pCi/g)				
0.444	0.016		NM	80CAS 01
0.444	0.016	D	NM	81CAS 01
V (ug/g)				
37.4	3.1	11	AA	82LIN 03
39	2		ITNA	83JER 01
40.5	0.9		ICPES	85HAR 01
41	2.05		AA	82KAM 01
41.6	2.2		ITNA	85SUN 01
42	2		ICPES	83MAH 05
42	2.4	11	AA	82LIN 03
42	4.2		FAA	80LAN 01
43		34	WXRF	82MIL 01
43	1		ITNA	82JER 01
43	4		AA	83RAP 01
43.4	1.8		ITNA	83OBR 01
44			ITNA	84CLE 01
44	3		ITNA	80GER 01
44	7	11	AA	84NAK 01
44.3			ICPES	81MER 03
45	2		ITNA	84GLA 02
45.5	1.6	11	AA	84NAK 01
46		34	FAA	83BET 01
46		6	AE+AF	82GOL 01
46	2		ITNA	86GLA 01
46	8	34	FAA	83BET 01

TABLE 1632A-2: INDIVIDUAL DATA FOR NBS SRM 1632A (cont.)

Conc	Uncer	Com	Method	Reference
V (ug/g) cont.				
46	8.2		CPXRF	80KIR 01
46.9	2.5		ITNA	80GAR 01
48	7	6	AE+AF	82GOL 01
49			ITNA	85GAU 04
49.6	1.7	11	AA	82LIN 03
67	3		ICPES	84NAD 01
W (ng/g)				
600	200		ITNA	80GER 01
780	230		ITNA	83OBR 01
790	20		ITNA	84SUZ 02
890	150		ITNA	81JIN 01
920	150		ITNA	85SUN 01
1000	300		ITNA	79CAH 01
Y (ug/g)				
5.8	0.5		PAA	80GER 01
8.3	0.5		ICPES	82CRO 01
9.5		34	WXRF	82MIL 01
9.7	0.4		ICPES	85HAR 01
Yb (ug/g)				
0.9	0.01		ICPES	82CRO 01
0.98	0.07		ITNA	81JIN 01
0.98	0.08		ITNA	80GER 01
1.04	0.17		ITNA	85SUN 01
1.09	0.06		ITNA	85GAU 04
1.1			ITNA	85GRE 02
1.1	0.1	5	ITNA	80TOU 01
1.13	0.07		ITNA	86GLA 01
1.14	0.2		ITNA	84CHA 02
1.19	0.06		ITNA	84SUZ 02
1.2	0.1		ITNA	79CAH 01
Zn (ug/g)				
19	4		ITNA	86GLA 01
24.3	4		AA	79CAH 01
25	2		ITNA	84CHA 02
25	3	34	FAA	83BET 01
26	0.78		AA	82KAM 01
26	1		XRF	85HAR 01
26.6	0.1	11	AA	82LIN 03
27	6		ITNA	79CAH 01
27.1			ICPES	81MER 03
27.5	3		AA	83RAP 01
27.6	1.8	11	AA	84NAK 01
27.6	2.4	11	AA	84NAK 01
27.7	1.4	11	AA	82LIN 03
28		34	WXRF	82MIL 01
28	0.4		ICPES	83MAH 05
28	1		ICPES	85HAR 01
28	2		ITNA	83JER 01
28	3.7		CPXRF	80KIR 01
29		34	FAA	83BET 01
30	3		ITNA	80KOS 01
31	6		ITNA	80GER 01
39	8		ICPES	84NAD 01
Zr (ug/g)				
<	140		ITNA	86GLA 01
47	6		ITNA	80GER 01
55		34	WXRF	82MIL 01
57	5		PAA	80GER 01

TABLE 1632B-1: COMPILED DATA FOR NBS SRM 1632B TRACE ELEMENTS IN COAL
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD
ASH	%	6.79 ± 0.16
Al	ug/g	8550 ± 190
As	ug/g	3.72 ± 0.09
Ba	ug/g	67.5 ± 2.1
Br	ug/g	17
C-Total	%	78.11 ± 0.37
Ca	ug/g	2040 ± 60
Cd	ng/g	57.3 ± 2.7
Ce	ug/g	9
Cl	ug/g	1260
Co	ug/g	2.29 ± 0.17
Cr	ug/g	11
Cs	ng/g	440
Cu	ug/g	6.28 ± 0.30
Eu	ng/g	170
Fe	ug/g	7590 ± 450
H	%	5.07 ± 0.06
Heat	BTU/lb	14005 ± 35
Hf	ng/g	430
K	ug/g	748 ± 28
La	ug/g	5.1
Li	ug/g	10
Mg	ug/g	383 ± 8
Mn	ug/g	12.4 ± 1
Mo	ug/g	0.9
N	%	1.56 ± 0.07
Na	ug/g	515 ± 11
Ni	ug/g	6.10 ± 0.27
Pb	ug/g	3.67 ± 0.26
Rb	ug/g	5.05 ± 0.11
S	%	1.89 ± 0.06
Sb	ng/g	240
Sc	ug/g	1.9
Se	ug/g	1.29 ± 0.11
Si	%	1.4
Sm	ug/g	0.87
Sr	ug/g	102
Th	ug/g	1.342 ± 0.036
Ti	ug/g	454 ± 17
U	ng/g	436 ± 12
V	ug/g	14
Volatile	%	35.4 ± 1.1
W	ug/g	480
Zn	ug/g	11.89 ± 0.78

TABLE 1633-1: COMPILED DATA FOR NBS SRM 1633 TRACE ELEMENTS IN COAL FLY ASH (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		XRF		PAA		OES		OTHER METHODS				
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method	Mean ± SD	(n) Method
Ag	ng/g	---	300 ± 50	(3)	300	258 - 350	350	(1)	258	(1)	---		---		---		---		300	(1)	SSMS	---	
Al	%	---	12.6 ± 0.6	(37)	12.6	11.6 - 14.1	13.0 ± 0.7	(4)	12.4 ± 0.6	(17)	12.3 ± 0.7	(8)	11.7	(1)	---		13.2 ± 0.7	(3)	12.6 ± 0.4	(3)	TCGS	12.9	(2) 14NAA
As	ug/g	61 ± 6	61 ± 4	(59)	60.4	54 - 69.5	61 ± 4	(7)	60 ± 4	(28)	60 ± 8	(5)	64 ± 2	(3)	62.5 ± 1.7	(8)	---		68	(2)	14NAA	60	(1) GCMES
As	ug/g	---	---		---	---	---		---		---		---		---		---		55.8	(1)	AE-AF	61 ± 11	(3) SSMS
As	ug/g	---	---		---	---	---		---		---		---		---		---		59.5	(2)	FAE	---	
Au	ng/g	---	5.2 ± 2.6	(3)	4.84	2.75 - 8.0	---		5.2 ± 2.6	(3)	---		---		---		---		---			---	
B	ug/g	---	464 ± 35	(8)	450	320 - 600	---		---		428	(2)	---		---		420	(2)	320	(1)	COLOR	600	(1) SSMS
B	ug/g	---	---		---	---	---		---		---		---		---		---		471 ± 30	(5)	TCGS	---	
Ba	ug/g	---	2665 ± 160	(46)	2660	2300 - 3000	2570 ± 300	(3)	2670 ± 130	(29)	2580 ± 300	(6)	2410 ± 410	(4)	2605	(2)	3000	(1)	2325	(2)	14NAA	3000	(1) SSMS
Be	ug/g	12	12.1 ± 1.0	(18)	12	10.1 - 14	12.2 ± 0.8	(12)	---		12.3 ± 1.7	(5)	---		---		12.5	(2)	---			---	
Bi	ug/g	---	2 ± 2	(3)	1.08	0.7 - 4.5	---		---		---		---		1.08	(1)	---		4.5	(1)	SSMS	---	
Br	ug/g	---	8.4 ± 2.2	(22)	7.52	5.8 - 12.1	---		8.4 ± 2.3	(19)	---		7.75	(2)	---		---		---			---	
C	%	---	3.3 ± 0.2	(3)	3.3	3.05 - 3.45	---		---		---		---		---		---		3.45	(1)	GRAV	3.05	(1) CB
Ca	%	---	4.65 ± 0.34	(44)	4.62	3.92 - 5.3	4.5 ± 0.3	(3)	4.48 ± 0.25	(15)	4.63 ± 0.13	(7)	4.7 ± 0.6	(6)	4.8 ± 0.6	(5)	4.75	(2)	4.5 ± 0.6	(3)	TCGS	4.74	(2) 14NAA
Cd	ug/g	1.45 ± 0.06	1.47 ± 0.15	(36)	1.5	1.2 - 1.85	1.46 ± 0.14	(15)	1.36 ± 0.20	(5)	1.8 ± 0.4	(3)	---		1.32 ± 0.17	(5)	---		1.53	(2)	AE-AF	1.63	(1) SSMS
Cd	ug/g	---	---		---	---	---		---		---		---		---		---		1.50 ± 0.10	(3)	TCGS	1.5	(1) POL
Cd	ug/g	---	---		---	---	---		---		---		---		---		---		0.93	(1)	POT	1.6	(1) FAE
Cd	ug/g	---	---		---	---	---		---		---		---		---		---		1.52	(1)	AF	1.850	(1) IDMS
Ce	ug/g	---	149 ± 10	(33)	150.6	125 - 176	---		150 ± 7	(20)	148	(2)	154 ± 6	(3)	152.7 ± 0.6	(3)	200	(1)	210	(2)	SSMS	136	(2) 14NAA
Cl	ug/g	---	38 ± 13	(14)	40.6	19.6 - 58	---		40 ± 13	(10)	---		---		22.3	(2)	---		42	(1)	SSMS	---	
Co	ug/g	38	40 ± 3	(44)	40	32 - 48	40 ± 5	(6)	39.4 ± 1.9	(24)	37 ± 10	(7)	---		40 ± 3	(4)	38	(1)	38	(1)	SSMS	45	(2) 14NAA
Cr	ug/g	131 ± 2	127 ± 10	(58)	129.2	103 - 159	126 ± 10	(10)	128 ± 7	(27)	115 ± 11	(8)	131 ± 17	(5)	136 ± 6	(4)	135	(2)	140 ± 30	(3)	SSMS	---	
Cs	ug/g	---	8.6 ± 0.6	(26)	8.4	7.3 - 10	---		8.5 ± 0.5	(22)	---		---		8	(1)	---		10	(1)	14NAA	8.6	(1) SSMS
Cu	ug/g	128 ± 5	129 ± 7	(39)	129	115 - 142	126 ± 4	(11)	128 ± 12	(6)	130 ± 7	(8)	130 ± 6	(7)	138 ± 3	(3)	110	(1)	135 ± 9	(3)	SSMS	131	(1) AE-AF
Dy	ug/g	---	10.2 ± 1.1	(12)	10.2	9 - 12.1	---		9.8 ± 0.8	(10)	---		---		---		---		12	(1)	SSMS	---	
Er	ug/g	---	34 ± 48	(3)	11	2.1 - 89	---		89	(1)	---		---		---		---		6.55	(2)	SSMS	---	
Eu	ug/g	---	2.64 ± 0.19	(25)	2.6	2.3 - 3.1	---		2.60 ± 0.15	(22)	2.5	(2)	---		---		2.8	(1)	---			---	
F	ug/g	---	17 ± 6	(3)	20	10 - 20	20	(1)	---		---		---		---		---		20	(1)	ISE	---	
Fe	%	---	6.16 ± 0.27	(60)	6.2	5.53 - 6.8	6.3 ± 0.4	(8)	6.13 ± 0.26	(24)	6.12 ± 0.29	(9)	6.11 ± 0.12	(8)	6.09	(2)	5.87 ± 0.30	(3)	6.2	(1)	FAF	6.68	(2) 14NAA
Fe	%	---	---		---	---	---		---		---		---		---		---		6.34 ± 0.32	(3)	TCGS	---	
Ga	ug/g	---	42 ± 4	(16)	41	34.3 - 50	58	(1)	41 ± 3	(11)	---		43 ± 5	(3)	---		---		48	(1)	COLOR	---	
Gd	ug/g	---	11.6 ± 0.4	(6)	11.6	11 - 12.1	---		11.5 ± 0.4	(3)	12.1	(1)	---		---		---		11.6	(2)	TCGS	---	
Ge	ug/g	---	24 ± 3	(7)	25	19 - 26.8	---		---		26.8	(1)	22.5	(2)	---		25	(1)	25.9	(1)	COLOR	---	
H	ug/g	---	1100	(2)	---	1000 - 1200	---		---		---		---		---		---		1200	(1)	TCGS	---	
H2O-	%	---	0.03	(1)	---	---	---		---		---		---		---		---		0.17	(1)	FD	---	
H2O-T	%	---	0.17	(1)	---	---	---		---		---		---		---		---		---			---	
H2SO4	ug/g	---	< 1000		---	---	---		---		---		---		---		---		---			---	
Hf	ug/g	---	7.6 ± 0.5	(21)	7.62	6.5 - 8.2	---		7.6 ± 0.5	(21)	---		---		---		---		---			---	
Hg	ng/g	140 ± 10	136 ± 17	(15)	137	100 - 170	128 ± 9	(5)	144 ± 10	(6)	---		---		167 ± 34	(5)	---		---			---	
Ho	ug/g	---	2.0 ± 0.9	(6)	1.94	0.82 - 3.6	---		1.96 ± 0.03	(4)	---		---		---		---		2.21	(2)	SSMS	---	
I	ug/g	---	2.8 ± 0.4	(6)	2.9	2 - 3.4	---		2.6 ± 0.6	(3)	---		---		2.85	(2)	---		3.4	(1)	SSMS	---	
In	ng/g	---	220 ± 80	(10)	16	118 - 320	---		200 ± 90	(8)	---		---		285	(2)	---		---			---	
Ir	ng/g	---	17.6 ± 1.7	(3)	18.6	15.6 - 18.6	---		17.6 ± 1.7	(3)	---		---		---		---		---			---	
K	%	1.72	1.69 ± 0.09	(47)	1.71	1.51 - 1.9	1.66 ± 0.05	(4)	1.72 ± 0.11	(21)	1.65 ± 0.10	(7)	1.68 ± 0.05	(4)	1.59 ± 0.01	(3)	1.6	(1)	1.73 ± 0.04	(3)	TCGS	1.71	(2) GAMMA
K	%	---	---		---	---	---		---		---		---		---		---		1.85	(2)	14NAA	---	
La	ug/g	---	79 ± 5	(33)	80	68 - 91	---		80 ± 5	(26)	75 ± 6	(3)	77 ± 5	(3)	---		---		---			---	
Li	ug/g	---	170 ± 80	(5)	161	80 - 300	80	(1)	---		174	(2)	---		---		140	(1)	---			---	
Lu	ug/g	---	1.1 ± 0.3	(15)	1.01	0.78 - 1.7	---		1.11 ± 0.24	(13)	---		---		---		---		1.24	(2)	SSMS	---	
Mg	%	---	1.5 ± 0.3	(35)	1.5	1.01 - 2.1	1.29 ± 0.14	(3)	1.72 ± 0.25	(14)	1.26 ± 0.11	(7)	---		1.48 ± 0.03	(4)	1.6 ± 0.2	(3)	1.8	(2)	14NAA	1.5	(1) TCGS
Mn	ug/g	493 ± 7	494 ± 20	(59)	493	440 - 540	492 ± 24	(11)	491 ± 18	(22)	488 ± 19	(7)	508 ± 17	(7)	493 ± 2	(4)	485 ± 22	(3)	480	(1)	TCGS	509	(2) SSMS
Mo	ug/g	---	28 ± 5	(15)	28	20 - 37	36	(1)	27 ± 6	(5)	29	(2)	26.5	(2)	---		37	(1)	26	(1)	SSMS	25.2	(2) 14NAA
N	ug/g	---	< 1000		---	---	---		---		---		---		---		---		---			---	
NH4	ug/g	---	< 100		---	---	---		---		---		---		---		---		---			---	
NO2	ug/g	---	< 100		---	---	---		---		---		---		---		---		---			---	
NO3	ug/g	---	< 100		---	---							---		---		---		---			---	

TABLE 1633-1: COMPILED DATA FOR NBS SRM 1633 TRACE ELEMENTS IN COAL FLY ASH (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		XRF		PAA		OES		OTHER METHODS				
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method	Mean ± SD	(n) Method
Na	ug/g	---	3130 ± 200	(41)	3200	2658 - 3600	3170 ± 120	(4)	3080 ± 240	(21)	3100 ± 140	(7)	---		3600 ± 300	(4)	2950	(2)	3240	(2)	14NAA	3300	(2) TCGS
Na	ug/g	---	---		---	---	---		---		---		---		---		---		3200	(1)	SSMS	---	
Nb	ug/g	--	29 ± 20	(4)	26	7 - 56	---		---		---		27	(2)	---		---		56	(1)	SSMS	---	
Nd	ug/g	---	64 ± 6	(14)	62	57.8 - 81	---		63 ± 4	(10)	94	(1)	---		---		---		75	(2)	SSMS	62.0	(2) TCGS
Ni	ug/g	98 ± 3	98 ± 6	(45)	98.5	84 - 110	96 ± 9	(8)	97 ± 14	(11)	101 ± 14	(6)	98 ± 6	(6)	96 ± 3	(7)	120	(2)	106	(2)	14NAA	99	(1) AF
Ni	ug/g	---	---		---	---	---		---		---		---		---		---		96.47 ± 0.12	(3)	IDMS	98	(1) POL
Ni	ug/g	---	---		---	---	---		---		---		---		---		---		102	(2)	SSMS	---	
O	%	---	47.02	(1)	---	---	---		---		---		---		---		---		47.02	(1)	14NAA	---	
Os	ng/g	---	< 400		---	---	---		< 4000		---		---		---		---		< 400		UU	---	
P	ug/g	---	1010 ± 180	(8)	1040	750 - 1300	880	(1)	---		940 ± 130	(5)	---		---		---		1900	(1)	COLOR	1300	(1) SSMS
Pb	ug/g	70 ± 4	72 ± 6	(39)	71	62 - 82	74 ± 7	(13)	71	(1)	69 ± 13	(6)	67 ± 3	(4)	70 ± 3	(6)	74.5	(2)	67	(1)	POL	78.0	(2) IDMS
Pb	ug/g	---	---		---	---	---		---		---		---		---		---		76	(1)	AE-AF	69	(2) SSMS
Pb	ug/g	---	---		---	---	---		---		---		---		---		---		68.8	(1)	POT	---	
Pb-210	pCi/g	---	3.37	(1)	---	---	---		---		---		---		---		---		3.37	(1)	NM	---	
Pd	ng/g	---	< 2		---	---	---		< 2		---		< 4000		---		---		---			---	
Pr	ug/g	---	31 ± 8	(3)	28	24 - 40	---		---		24	(1)	---		---		---		34	(2)	SSMS	---	
Pt	ug/g	---	0.74 ± 0.55	(3)	0.451	0.4 - 1.38	---		0.92	(2)	---		---		---		---		---			---	
Rb	ug/g	112	115 ± 8	(30)	115	96 - 130	---		116 ± 8	(19)	---		115 ± 7	(5)	109 ± 16	(4)	110	(1)	120	(1)	SSMS	120	(2) 14NAA
Re	ng/g	---	< 200		---	---	---		---		---		---		---		---		---			---	
Rh	ug/g	---	< 0.5		---	---	---		---		---		< 4		---		< 30		< 0.5		UU	---	
Ru	ug/g	---	1.6	(2)	---	0.26 - 3	---		0.26	(1)	---		3	(1)	---		---		---			---	
S	ug/g	---	4500 ± 500	(5)	4400	3900 - 5090	---		---		---		---		---		---		4100 ± 260	(3)	TCGS	5010	(2) NM
SO4	%	---	0.98	(1)	---	---	---		---		---		---		---		---		---			---	
Sb	ug/g	---	6.8 ± 0.7	(37)	6.9	5 - 8.4	6.63	(2)	6.8 ± 0.6	(25)	6.7	(2)	---		7.07 ± 0.06	(5)	---		6.9	(1)	SSMS	8.3	(1) 14NAA
Sc	ug/g	---	26 ± 3	(31)	26.9	20 - 32	---		27.0 ± 1.5	(22)	22	(2)	---		23.8	(2)	23	(1)	35	(2)	14NAA	---	
Se	ug/g	9.4 ± 0.5	9.6 ± 0.6	(44)	9.5	8.7 - 11	9.48	(2)	9.7 ± 0.7	(25)	9.1	(2)	9.6 ± 1.2	(3)	9.76 ± 0.26	(5)	---		9.7	(2)	SSMS	9.35	(2) GCMES
Se	ug/g	---	---		---	---	---		---		---		---		---		---		9.35	(1)	DCPES	4.5	(1) ASV
Se	ug/g	---	---		---	---	---		---		---		---		---		---		9.7	(1)	COLOR	---	
Si	%	---	22.0 ± 1.0	(17)	22	20 - 23.5	22.3	(2)	23.5	(1)	21.8 ± 1.2	(3)	22.1 ± 0.8	(3)	20.5	(2)	---		22.7 ± 1.6	(3)	TCGS	22.7 ± 0.3	(3) 14NAA
Sm	ug/g	---	12.9 ± 1.5	(27)	12.9	10.05 - 17	---		12.7 ± 1.1	(22)	15.8	(1)	---		---		---		12.6	(2)	TCGS	18.5	(2) SSMS
Sn	ug/g	---	8.1 ± 3.8	(10)	6.7	2.8 - 12.7	12.7	(1)	10.2	(1)	---		5.85	(2)	12.2	(2)	10	(1)	2.8	(1)	SSMS	5.7	(1) NM
Sr	ug/g	1380	1380 ± 100	(42)	1380	1200 - 1620	1340	(1)	1420 ± 120	(23)	1390 ± 140	(5)	1340 ± 70	(5)	1310 ± 70	(4)	---		1340 ± 60	(3)	14NAA	1400	(1) SSMS
Ta	ug/g	---	1.90 ± 0.14	(21)	1.9	1.6 - 2.2	---		1.90 ± 0.15	(20)	---		---		---		---		---			---	
Tb	ug/g	---	2.0 ± 0.5	(20)	1.99	1.2 - 3.12	---		1.9 ± 0.3	(17)	---		---		---		---		2.6	(2)	SSMS	---	
Te	ug/g	---	1.8 ± 0.8	(3)	2.3	0.92 - 9.9	0.92	(1)	9.9	(1)	---		---		2.31	(2)	---		---			---	
Th	ug/g	24	24.5 ± 1.8	(25)	24.4	20 - 28	---		24.6 ± 1.2	(20)	---		21	(1)	---		---		26.2	(2)	GAMMA	28	(1) SSMS
Th-228	pCi/g	---	2.23	(1)	---	---	---		---		---		---		---		---		2.23	(1)	NM	---	
Th-230	pCi/g	---	3.74	(1)	---	---	---		---		---		---		---		---		3.74	(1)	NM	---	
Th-232	pCi/g	---	2.45	(1)	---	---	---		---		---		---		---		---		2.45	(1)	NM	---	
Ti	ug/g	---	7100 ± 500	(45)	7230	6000 - 8200	7600 ± 1000	(3)	7000 ± 600	(18)	7100 ± 600	(8)	7700 ± 500	(5)	7420 ± 220	(5)	6650	(2)	7120 ± 140	(3)	TCGS	7450	(2) 14NAA
Tl	ug/g	4	4.0 ± 0.7	(8)	3.7	3.5 - 5.3	5	(1)	---		---		---		3.63 ± 0.13	(5)	---		5.3	(1)	POT	3.8	(1) SSMS
Tm	ug/g	---	1.35 ± 0.06	(4)	1.3	1.3 - 1.43	---		1.36 ± 0.06	(3)	---		---		---		---		1.3	(1)	SSMS	---	
U	ug/g	11.6 ± 0.2	11.8 ± 1.0	(29)	11.8	9 - 13.8	---		11.8 ± 0.9	(18)	---		9	(1)	11.8 ± 0.5	(5)	---		13	(1)	SSMS	11.75	(2) IDMS
U	ug/g	---	---		---	---	---		---		---		---		---		---		8.6	(1)	FLUOR	12	(2) GAMMA
U-234	pCi/g	---	4.07	(1)	---	---	---		---		---		---		---		---		4.07	(1)	NM	---	
U-235	pCi/g	---	0.18	(1)	---	---	---		---		---		---		---		---		0.1790	(1)	NM	---	
U-238	pCi/g	---	4.01	(1)	---	---	---		---		---		---		---		---		4.01	(1)	NM	---	
V	ug/g	214 ± 8	224 ± 24	(44)	223	174 - 295	260 ± 100	(4)	228 ± 15	(20)	225 ± 8	(7)	210 ± 50	(5)	209	(2)	220	(2)	190	(1)	TCGS	240	(2) SSMS
W	ug/g	---	4.8 ± 0.6	(16)	4.6	3.8 - 6	---		4.8 ± 0.7	(14)	---		---		---		---		4.6	(1)	SSMS	---	
Y	ug/g	---	64 ± 4	(11)	62	56 - 68	---		---		63.5	(2)	65 ± 4	(3)	64 ± 3	(4)	44	(1)	62	(2)	SSMS	---	
Yb	ug/g	---	6.5 ± 1.1	(24)	6.2	4.7 - 8.9	---		6.3 ± 1.0	(19)	6.55	(2)	---		---		5.7	(1)	8.5	(2)	SSMS	---	
Zn	ug/g	210 ± 20	211 ± 11	(63)	212	180.7 - 250	213 ± 9	(13)	209 ± 10	(19)	212 ± 11	(10)	207 ± 7	(7)	212 ± 6	(6)	210	(2)	201	(1)	AE-AF	214	(1) AF
Zn	ug/g	---	---		---	---	---		---		---		---		---		---		250 ± 40	(3)	SSMS	---	
Zr	ug/g	---	300 ± 60	(23)	301	160 - 410	---		330 ± 90	(9)	256	(2)	302 ± 11	(3)	300 ± 2	(5)	160	(1)	400	(1)	SSMS	395	(2) 14NAA

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ag (ng/g)				
< 100		L	ITNA	77CHA 01
< 100		D	ITNA	78RYA 01
< 300		L	ICPES	81CHU 01
< 400		D	PAA	77CHA 01
< 400		L	PAA	76CHA 01
< 500		L	UU	80HEN 01
< 600		L	IENA	80GLA 03
< 1000		L	OES	76WEW 01
258	20		RTNA	77NAD 02
300			SSMS	83WEI 02
350			AA	76WEW 01
1320	130		PAA	74CHA 01
Al (%)				
10.4	0.6		ITNA	78MAC 01
10.96	0.402		ITNA	73SHE 01
11.1	0.6		ICPES	85HAR 01
11.6			ICPES	80NAD 01
11.7	2		XRF	79SMI 01
11.8	0.8		ITNA	76BLO 01
11.9			ICPES	84CLE 01
12	1		ITNA	76OND 01
12.1	0.5		ITNA	76RAG 01
12.2	0.3		ITNA	77MAE 01
12.2	0.5		14NAA	81WIL 02
12.3		35	TCGS	78GLA 04
12.3	0.5		ITNA	76WEW 01
12.3	0.6	D	ITNA	78RYA 01
12.3	0.6		ITNA	77CHA 01
12.35	0.25		ITNA	76STE 05
12.35	0.25		ITNA	77ROW 03
12.4	0.3	D	NAA	79STE 01
12.4	0.7	35	ITNA	81GLA 03
12.5			ITNA	75KLE 01
12.5	0.3		ICPES	80NAD 01
12.6	0.1	35	ITNA	81GLA 02
12.6	0.2		ICPES	84BOT 01
12.6	0.2		TCGS	79FAI 01
12.6	0.2	D	TCGS	80AND 01
12.6	0.4		ITNA	73ABE 01
12.6	0.7		AA	76OND 01
12.7			UU	80HEN 01
12.7			OES	80WAL 01
12.7			ITNA	78WEA 01
12.7			AA	79SIL 01
12.7	0.05		FAA	77PIL 01
12.7	0.5		ITNA	75OND 01
12.7	0.5		ICPES	84NAD 01
12.8			ICPES	80FLO 01
12.8	0.3		ITNA	78LAU 02

Conc	Uncer	Com	Method	Reference
Al (%) cont.				
12.99	0.47		ICPES	81CHU 01
13	0.2		TCGS	79AND 01
13	2.6		OES	76WEW 01
13.6	0.5		14NAA	81WIL 01
14			OES	78SUG 01
14	1		AA	80STO 02
14.1	2.8		ITNA	81WAN 01
14.3	1.1		ITNA	78NAD 02
14.3	1.1		ITNA	75NAD 02
As (ug/g)				
46			ITNA	78KEL 02
49	5		ITNA	76KUC 01
50		6	SSMS	78GUI 01
54			ITNA	75KLE 01
54	1		IENA	78WAN 01
54	3		ITNA	78MAC 01
55			FAA	78GUI 01
55	10		ICPES	81CHU 01
55.8	1.4	H	AE+AF	77FEL 01
56			ICPES	80FLO 01
56	1	H	FAE	79FEL 01
56.6	3.6		ITNA	81WAN 01
57			ICPES	82NYG 01
57	3	35	NAA	81GLA 03
57	4		ITNA	75OND 01
58		13	ICPES	84BOT 01
58	1		ITNA	76BLO 01
58	1	35	RTNA	78GLA 02
58	2		IENA	76STE 05
58	4	D	NAA	74OND 01
58	4		FAA	78HAY 01
58.1	1.6		RTNA	81GAL 01
58.1	1.6	D	RTNA	81GAL 02
59			ITNA	78WEA 01
59	2	35	VV	81GLA 04
59	3.5		HAA	77SMI 01
59	4		ITNA	77CHA 01
59	4	D	ITNA	78RYA 01
59.1	4.8		IENA	77ROW 04
59.8	2		IENA	77ROW 03
60			UU	80HEN 01
60	2.6	D	PAA	77CHA 01
60	2.6		PAA	76CHA 01
60	2.6		NAA	77JER 01
60	3		GCMES	75TAL 01
60.4	0.8	35	IENA	80GLA 03
60.7	2.6		PAA	74CHA 01
61			SSMS	83WEI 02
61	3		RTNA	74ORV 01

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference
As (ug/g) cont.				
61	4		ITNA	76OND 01
61	5		ITNA	73ABE 01
61	6		ITNA	84SIL 01
61.2			FAA	75POL 01
61.5	2.4	D	NAA	79STE 01
61.5	2.4		ITNA	77ROW 04
61.5	3		PAA	75OND 01
62			XRF	78CAM 02
63	4	6	PAA	82SEG 01
63	4		PAA	80SEG 01
63	4		FAE	80DSI 01
63	4		ITNA	85FIL 01
63	4	6	PAA	82SEG 01
63	7		EXRF	77GIA 01
63.7	3.6		HAA	82NAD 01
64			FAA	84SIL 01
64	1		PAA	76KAT 03
64	2		ITNA	78LAU 02
64	4		ITNA	76RAG 01
65	1		PAA	76KAT 02
66	1		XRF	79SMI 01
66.3	10.1		FAA	82BEN 01
67.6	0.6		ITNA	75NAD 02
68	6		ITNA	78NAD 02
68	12		14NAA	81WIL 02
68	12		14NAA	81WIL 01
68	15		ITNA	76WEW 01
69.5	7.6		ITNA	73SHE 01
72		6	SSMS	78GUI 01
74		13	ICPES	84BOT 01
Au (ng/g)				
<	300	L	ICPES	81CHU 01
<	500	L	UU	80HEN 01
2.75	0.2		RTNA	77NAD 02
4.84	0.13		RTNA	77NAD 01
8	2	D	ITNA	78RYA 01
8	2		ITNA	77CHA 01
1700			ITNA	78WEA 01

Conc	Uncer	Com	Method	Reference
B (ug/g)				
100			UU	80HEN 01
320			COLOR	79DAL 01
340			OES	79DAL 01
407			ICPES	80NAD 01
433	4	D	TCGS	80AND 01
433	4		TCGS	79FAI 01
443	5		TCGS	79AND 01
450	20		ICPES	82OWE 01
490	14	6	TCGS	76GLA 01
492	13	6	TCGS	76GLA 01
497	14	6	TCGS	76GLA 01
500	29		OES	76WEW 01
600			SSMS	83WEI 02
Ba (ug/g)				
1800			XRF	76WEW 01
2100	100		14NAA	81WIL 01
2100	200		ICPES	84NAD 01
2300	100		AA	76OND 01
2370			ICPES	80NAD 01
2490			ITNA	75MIL 01
2500			UU	80HEN 01
2500	250		ITNA	81WAN 01
2500	300		ITNA	76WEW 01
2510	50		IENA	77ROW 04
2510	160		ITNA	76RAG 01
2510	200		ITNA	76OND 01
2520			AA	79SIL 01
2540			ICPES	84CLE 01
2540			XRF	78CAM 02
2540	50		IENA	77ROW 03
2540	50	D	NAA	79STE 01
2540	51		IENA	76STE 05
2550	30		ITNA	77ROW 04
2550	30	D	NAA	79STE 01
2550	110		14NAA	81WIL 02
2580	170		ITNA	76STE 05
2600	160	D	PAA	77CHA 01
2600	160		PAA	76CHA 01
2600	170	5	IENA	80GLA 03
2600	300		ITNA	78LAU 02
2610	210		PAA	74CHA 01
2630	20		XRF	79SMI 01
2660	150		ITNA	84GLA 02
2670	85		EXRF	77GIA 01
2700			ITNA	78WEA 01
2700	200		ITNA	78NAD 02
2700	200		ITNA	75OND 01
2700	200		ITNA	75NAD 02
2710	190	D	ITNA	78RYA 01

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference
Ba (ug/g) cont.				
2710	190		ITNA	77CHA 01
2720	80	5	IENA	80GLA 03
2734	167		ITNA	73SHE 01
2750	140	5	IENA	80GLA 03
2780			ITNA	75KLE 01
2800			ICPES	80FLO 01
2800	60		ITNA	85FIL 01
2800	100	35	ITNA	81GLA 03
2800	100	9	ITNA	78LAU 02
2800	200		ICPES	85HAR 01
2800	200	35	ITNA	81GLA 02
2840	180	35	NAA	81GLA 04
2860	70		ICPES	84BOT 01
2880	100		ITNA	77MAE 01
2900	120		FAA	76OWE 01
2900	200	5	IENA	80GLA 03
3000			SSMS	83WEI 02
3000	600		OES	76WEW 01
3200	400		ITNA	78MAC 01
3400	400		ITNA	73ABE 01
Be (ug/g)				
5			UU	80HEN 01
9.56			FAA	75POL 01
10.1		6	FAA	79GEL 01
10.9			ICPES	80NAD 01
11			ICPES	80FLO 01
11			OES	78SUG 01
11.9	0.3		ICPES	84BOT 01
12			AA	79SIL 01
12			AA	76WEW 01
12	0.8		FAA	75OWE 01
12	1	35	FAA	76GLA 02
12.1		6	FAA	79GEL 01
12.3	0.3		FAA	76OWE 01
12.4	0.31		AA	74RAI 01
12.6		6	FAA	79GEL 01
12.6	0.25		ICPES	81CHU 01
12.6	0.5		AA	76OND 01
13.2		6	FAA	79GEL 01
13.5		6	FAA	79GEL 01
14	0.95		OES	76WEW 01
15			ICPES	84CLE 01
18.7	0.5		ICPES	84NAD 01

Conc	Uncer	Com	Method	Reference
Bi (ug/g)				
<	1	L	PAA	76CHA 01
<	1	D	PAA	77CHA 01
<	10	L	OES	76WEW 01
0.7			UU	80HEN 01
1.08			PAA	74CHA 01
4.5			SSMS	83WEI 02
Br (ug/g)				
5.8	0.8	35	IENA	79GLA 02
6			ITNA	75KLE 01
6	1		ITNA	78MAC 01
6	2		EXRF	77GIA 01
6.4	0.2	35	ITNA	81GLA 03
6.5	0.2	5	IENA	80GLA 03
6.7	0.6		ITNA	76RAG 01
6.9	0.3	35	NAA	81GLA 04
7	1		ITNA	78LAU 02
7.5	0.5		ITNA	78NAD 02
7.52	0.46		ITNA	75NAD 02
7.7	1.5		IENA	76STE 05
8.4	1.5		IENA	77ROW 03
9.2	0.6		ITNA	77ROW 04
9.2	0.6	D	NAA	79STE 01
9.2	0.8		IENA	77ROW 04
9.5			XRF	78CAM 02
10			UU	80HEN 01
11.2	3.5	D	ITNA	78RYA 01
11.2	3.5		ITNA	77CHA 01
12			ITNA	78WEA 01
12	4		ITNA	75OND 01
12	4		ITNA	73ABE 01
12.1	1.5		ITNA	73SHE 01
C (%)				
3.05	0.05		CB	79SIL 01
3.3			UU	80HEN 01
3.45	0.02		GRAV	79SIL 01
Ca (%)				
1.15	0.02		AA	82HAR 01
3.5			XRF	76WEW 01
3.8		35	TCGS	78GLA 04
3.92	0.28		PAA	74CHA 01
4.1	0.36		ITNA	73SHE 01
4.2			UU	80HEN 01
4.2	0.2		ITNA	76RAG 01
4.21	0.09		ITNA	75NAD 02
4.21	0.09		ITNA	78NAD 02

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference
Ca (%) cont.				
4.3			AA	79SIL 01
4.3	0.2		AA	76OND 01
4.3	0.3	35	ITNA	81GLA 02
4.34			ITNA	75KLE 01
4.4	0.18		14NAA	81WIL 02
4.4	0.4	D	PAA	77CHA 01
4.4	0.4		ITNA	75OND 01
4.4	0.4		PAA	76CHA 01
4.5			ICPES	80FLO 01
4.5	0.05		ICPES	85HAR 01
4.5	0.5	D	ITNA	78RYA 01
4.5	0.5		ITNA	77CHA 01
4.5	0.6	35	IENA	80GLA 03
4.54	0.06		ICPES	84BOT 01
4.6			EXRF	78WEG 01
4.6	0.5		ITNA	78LAU 02
4.62	0.06		ICPES	80NAD 01
4.62	0.15		EXRF	78PEL 01
4.65	0.15		ICPES	81CHU 01
4.69	0.14	D	NAA	79STE 01
4.69	0.14		ITNA	77ROW 03
4.69	0.14		ITNA	76STE 05
4.7			OES	80WAL 01
4.7	0.3		ITNA	77MAE 01
4.73	0.42		ITNA	81WAN 01
4.75	0.08	D	TCGS	80AND 01
4.75	0.08		TCGS	79FAI 01
4.8			ICPES	80NAD 01
4.8	0.96		OES	76WEW 01
4.81			ICPES	84CLE 01
4.9	0.2		AA	80STO 02
4.9	0.2		TCGS	79AND 01
5	1.1		ITNA	76OND 01
5.04			XRF	78CAM 02
5.09	0.56		14NAA	77VAN 01
5.1	0.03		PAA	76KAT 02
5.1	0.05		PAA	76KAT 03
5.1	0.6		ITNA	76WEW 01
5.11	0.13		XRF	79SMI 01
5.21	0.2		ICPES	84NAD 01
5.3	0.1		EXRF	77NIE 01
5.3	0.5		PAA	75OND 01

Conc	Uncer	Com	Method	Reference
Cd (ug/g)				
0.93			POT	82CHR 01
1			ITNA	76WEW 01
1.2	0.04	7	AA	73TAL 01
1.2	0.04		FAA	74TAL 01
1.2	0.1	6	PAA	82SEG 01
1.2	0.2	6	PAA	82SEG 01
1.2	0.2		PAA	80SEG 01
1.3	0.25		FAA	76OWE 01
1.38	0.14		FAA	79GOD 01
1.4	0.16		TCGS	79AND 01
1.43			FAA	78GUI 01
1.43	0.04		RTNA	74ORV 01
1.43	0.07	D	RTNA	81GAL 02
1.43	0.07		RTNA	81GAL 01
1.45			FAA	75POL 01
1.45	0.04		AA	75EPS 01
1.45	0.06		RTNA	84DEL 01
1.46			AE+AF	77FEL 01
1.46	0.05		AA	74RAI 01
1.5			POL	74MAI 01
1.5	0.07		TCGS	79FAI 01
1.5	0.07	D	TCGS	80AND 01
1.5	0.09	7	AA	73TAL 01
1.5	0.09		FAA	74TAL 01
1.5	0.1		NAA	77JER 01
1.5	0.1	D	PAA	77CHA 01
1.5	0.1		PAA	76CHA 01
1.5	0.15		FAA	74RAI 01
1.5	0.5		ICPES	81CHU 01
1.52	0.07		PAA	74CHA 01
1.52	0.08		AF	75EPS 01
1.53			AA	76WEW 01
1.55			FAA	79SIL 01
1.6	0.15	7	AE+AF	73TAL 01
1.6	0.15		FAE	74TAL 01
1.6	0.2	6	TCGS	76GLA 01
1.6	0.5		ICPES	80EPS 03
1.63	0.07	8	SSMS	80KOP 01
1.69			AA	78GEL 01
1.7	0.2		AA	76OND 01
1.85			IDMS	75KLE 01
2.2	0.6	13	ICPES	84BOT 01
9.5		13	ICPES	84BOT 01
15			UU	80HEN 01

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference
Ce (ug/g)				
125			UU	80HEN 01
129	10		ITNA	73SHE 01
136	5		14NAA	81WIL 01
136	8		14NAA	81WIL 02
140			ICPES	80FLO 01
140	10	D	ITNA	78RYA 01
140	10		ITNA	77CHA 01
141	7		ITNA	81WAN 01
145	5		ITNA	78LAU 02
145	6		ITNA	76WEW 01
146			ITNA	82GLA 02
146	15		ITNA	75OND 01
146	17		ITNA	76OND 01
148	6		ITNA	76RAG 01
148	7	35	ITNA	81GLA 02
149	4		XRF	79SMI 01
149	7	35	NAA	81GLA 04
149.6	2		ITNA	77ROW 03
149.6	2	D	ITNA	77ROW 04
150	2	D	NAA	79STE 01
150.6	3.3		IENA	77ROW 04
152	10	D	PAA	77CHA 01
152	10		PAA	76CHA 01
152	15		ITNA	85FIL 01
153	1		PAA	76KAT 02
153	2		PAA	76KAT 03
153	3	35	ITNA	81GLA 03
153	4		ITNA	84ODD 01
153	6		RTNA	84ODD 01
154			XRF	78CAM 02
154	8	35	IENA	80GLA 03
157	3.2		ICPES	81CHU 01
160	23		EXRF	77GIA 01
161	35		ITNA	78NAD 02
161	35		ITNA	75NAD 02
169			ITNA	75MIL 01
176	4		ITNA	78MAC 01
200	100		OES	76WEW 01
210			SSMS	83WEI 02
210	34		SSMS	78SUG 02

Conc	Uncer	Com	Method	Reference
Cl (ug/g)				
19.6	0.1		PAA	74CHA 01
20	2		ITNA	78NAD 02
20	2		ITNA	75NAD 02
25	7		PAA	76CHA 01
25	7	D	PAA	77CHA 01
32	10		ITNA	77CHA 01
32	10	D	ITNA	78RYA 01
40	8		ITNA	78MAC 01
40.6	14.4		ITNA	83LI 01
42			SSMS	83WEI 02
42			ITNA	78WEA 01
42	10		ITNA	75OND 01
50			UU	80HEN 01
52	15		ITNA	81WAN 01
56		35	ITNA	81GLA 03
58	9		ITNA	77MAE 01
185	44		ITNA	73SHE 01
Co (ug/g)				
25	3		ICPES	84NAD 01
26			ICPES	80NAD 01
32	1		ICPES	84BOT 01
32	2		AA	77MIT 01
35	2		ITNA	76KUC 01
35.4	2.8		PAA	74CHA 01
36.2	1.1		ITNA	76BLO 01
36.7	3.9		ITNA	75NAD 02
37	4		ITNA	78NAD 02
38			ITNA	78WEA 01
38			SSMS	83WEI 02
38	0.96		OES	76WEW 01
38	1		ITNA	85FIL 01
38	2	35	IENA	80GLA 03
38	2		ITNA	78MAC 01
38.6	3.7		ITNA	73SHE 01
39			AA	76WEW 01
39	2		ICPES	85HAR 01
39.4	1.2		ITNA	76RAG 01
39.8	0.9		ITNA	81WAN 01
40	2	35	NAA	81GLA 04
40	2		PAA	76CHA 01
40	2		ITNA	76OND 01
40	2		ITNA	73ABE 01
40	2	D	PAA	77CHA 01
40	4		FAA	76OWE 01
40.1	0.6		ITNA	84GLA 02
40.3	0.4		ITNA	77ROW 03
40.3	0.4	D	NAA	79STE 01
40.3	0.4	D	ITNA	77ROW 04
41			ICPES	80FLO 01

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference
Co (ug/g) cont.				
41	0.6		IENA	77ROW 04
41	1		ITNA	78LAU 02
41	1	35	ITNA	81GLA 02
41	1.2		ICPES	81CHU 01
41	2	35	ITNA	81GLA 03
41	3		ITNA	76WEW 01
41.5	1.2		ITNA	75OND 01
42			FAA	79SIL 01
42			ITNA	75MIL 01
42	1.6		ITNA	77CHA 01
42	1.6	D	ITNA	78RYA 01
42	3		PAA	76KAT 02
42	5		PAA	76KAT 03
42	6		AA	76OND 01
45	16		14NAA	81WIL 01
45	16		14NAA	81WIL 02
46			ITNA	75KLE 01
46	10		AA	82HAR 01
48			ITNA	84CLE 01
50			UU	80HEN 01
54			ICPES	84CLE 01
Cr (ug/g)				
96			ICPES	84SOB 01
103	10		AA	82HAR 01
104	4		ICPES	84NAD 01
110			ICPES	84CLE 01
112			XRF	78CAM 02
113			FAA	78GUI 01
113	1.5		ITNA	75NAD 02
113	2		ITNA	78NAD 02
114			ICPES	80NAD 01
117		6	SSMS	78GUI 01
117	7		ITNA	76RAG 01
118	6		ITNA	76OND 01
118	8		ITNA	76WEW 01
120			OES	78SUG 01
120	4		AA	76OND 01
120	5		ITNA	78MAC 01
120	6		ICPES	85HAR 01
122	12		ITNA	73SHE 01
123			ICPES	80FLO 01
124	9		ITNA	85FIL 01
124	14		XRF	79SMI 01
125	9		ICPES	84BOT 01
126	11		ITNA	76BLO 01
127	6	D	NAA	74OND 01
127	6		ITNA	75OND 01
128			ITNA	78WEA 01
128			AA	79SIL 01
Cr (ug/g) cont.				
128	5	35	ITNA	81GLA 02
128	5	35	ITNA	81GLA 04
128.5	8.5		AA	77MIT 01
129	3	D	NAA	79STE 01
129	3.9		ICPES	81CHU 01
129.2	2.7		ITNA	77ROW 03
129.2	2.7	D	ITNA	77ROW 04
130			AA	76WEW 01
130			SSMS	83WEI 02
130			UU	80HEN 01
130	4		ITNA	84GLA 02
130	5	9	ITNA	78LAU 02
131			EXRF	78WEG 01
131	6		PAA	76CHA 01
131	6	D	PAA	77CHA 01
131	6.1		PAA	74CHA 01
131	8		ITNA	73ABE 01
131	8		EXRF	78PEL 01
131	9		ITNA	76KUC 01
131.7	4.6		RTNA	81GAL 01
131.7	4.6	D	RTNA	81GAL 02
132	3.3		AA	74RAI 01
132	10		FAA	76OWE 01
132.3	0.35		RTNA	74MCC 01
134	9	35	ITNA	81GLA 03
135			ITNA	84CLE 01
135			AA	78GUI 01
135			AA	78WEG 01
135	6	D	ITNA	78RYA 01
135	6		ITNA	77CHA 01
135	14		IENA	77ROW 04
137	16		ITNA	81WAN 01
138			ITNA	75KLE 01
140	15		ITNA	78LAU 02
142	9		PAA	76KAT 02
142	13		PAA	76KAT 03
150	13		OES	76WEW 01
159	115		EXRF	77GIA 01
175		6	SSMS	78GUI 01
180			ITNA	75MIL 01
181			FAA	75POL 01

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference
Cs (ug/g)				
0.63	0.06		PAA	74CHA 01
5.8	1.4		ITNA	78NAD 02
5.81	1.4		ITNA	75NAD 02
7.3	1		ITNA	78LAU 02
7.7	1.3		ITNA	76WEW 01
8	1		PAA	76CHA 01
8	1	D	PAA	77CHA 01
8.1	0.5	9	ITNA	78LAU 02
8.2	0.4		ITNA	84GLA 02
8.2	0.5		ITNA	76OND 01
8.2	0.9		IENA	76STE 05
8.3	0.4	35	ITNA	81GLA 02
8.3	0.7		ITNA	85FIL 01
8.3	0.9		IENA	77ROW 03
8.3	1	D	ITNA	78RYA 01
8.3	1		ITNA	77CHA 01
8.4	0.2	D	NAA	79STE 01
8.4	0.5		ITNA	77ROW 04
8.42	0.22		IENA	77ROW 04
8.5	0.5		ITNA	78MAC 01
8.6			ITNA	78WEA 01
8.6			SSMS	83WEI 02
8.6	0.8		ITNA	76RAG 01
8.6	1.1		ITNA	75OND 01
8.7	0.3	35	IENA	80GLA 03
8.7	0.7	35	NAA	81GLA 04
8.8	0.4	35	ITNA	81GLA 03
8.9	0.8		ITNA	81WAN 01
9.4			ITNA	75MIL 01
9.9	0.8		ITNA	73ABE 01
10			UU	80HEN 01
10	1		14NAA	81WIL 02
13.8	1.4		ITNA	73SHE 01
Cu (ug/g)				
70.2	1.8		AA	77MIT 01
110	11		OES	76WEW 01
115	8		ITNA	77ROW 03
115	8		ITNA	76STE 05
115	8	D	NAA	79STE 01
119	5		AA	76OND 01
120			ICPES	80FLO 01
120			UU	80HEN 01
121			AA	79SIL 01
123			EXRF	78WEG 01
124			XRF	78CAM 02
124			ICPES	84SOB 01
124	19		FAA	76OWE 01
125			AA	78GUI 01
125	10	D	ITNA	78RYA 01
125	10		ITNA	77CHA 01
125	13		EXRF	78PEL 01
126	2		AA	82HAR 01
127			AA	78GEL 01
128	3.9		ICPES	81CHU 01
128	6		ICPES	84BOT 01
129			AA	76WEW 01
129			AA	78WEG 01
129	4		ICPES	85HAR 01
129	5	8	SSMS	80KOP 01
130	2.2		AA	74RAI 01
130	5		AA	80STO 02
131		6	SSMS	78GUI 01
131			FAA	78GUI 01
131			AE+AF	77FEL 01
132			ICPES	84CLE 01
133			XRF	75KLE 01
133	4		EXRF	77GIA 01
134	11	6	PAA	82SEG 01
135	3		XRF	79SMI 01
136			ICPES	80NAD 01
136	6	35	RTNA	77GLA 01
137	7		ITNA	76BLO 01
140	10		XRF	81COH 02
140	20	6	PAA	82SEG 01
140	20		PAA	80SEG 01
142	9		ITNA	73SHE 01
142	37		ICPES	84NAD 01
145		6	SSMS	78GUI 01
198	61		ITNA	81WAN 01
Dy (ug/g)				
7.6	2.4		ITNA	73SHE 01
9	0.1		RTNA	84ODD 01
9	2		ITNA	78MAC 01
9.1	0.1		ITNA	84ODD 01
9.4	0.5		ITNA	76STE 05
9.4	0.5		ITNA	77ROW 03
9.4	0.5	D	NAA	79STE 01
10.2			ITNA	75MIL 01
10.2		35	ITNA	81GLA 04
10.3	0.4	35	ITNA	81GLA 02
10.9			ITNA	78NAD 02
10.9			ITNA	75NAD 02
12			SSMS	83WEI 02
12.1	0.6		ITNA	76OND 01
19	3		SSMS	78SUG 02

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference
Er (ug/g)				
< 100		L	OES	76WEW 01
< 300		L	OES	76WEW 01
2.1			SSMS	83WEI 02
11	2		SSMS	78SUG 02
89	3		RTNA	84ODD 01
Eu (ug/g)				
1.9	0.2		ITNA	76OND 01
2			ICPES	80FLO 01
2	2	35	IENA	80GLA 03
2.3	0.1		ITNA	73ABE 01
2.39	0.11		ITNA	76RAG 01
2.42	0.16		ITNA	73SHE 01
2.44	0.19		ITNA	76STE 05
2.49	0.15	35	ITNA	81GLA 02
2.5			ITNA	78WEA 01
2.5	0.16	35	ITNA	81GLA 04
2.5	0.4		ITNA	75OND 01
2.56	0.07		ITNA	84GLA 02
2.57	0.19		ITNA	77ROW 03
2.6	0.2		ITNA	76WEW 01
2.6	0.2		ITNA	85FIL 01
2.6	0.2		ITNA	81WAN 01
2.62	0.05		ITNA	75NAD 02
2.62	0.05		ITNA	78NAD 02
2.69	0.09		ITNA	77ROW 04
2.69	0.09	D	NAA	79STE 01
2.7	0.1		ITNA	78LAU 02
2.72	0.07		ITNA	84ODD 01
2.79			ITNA	82GLA 02
2.8	0.13		OES	76WEW 01
2.8	0.3		RTNA	84ODD 01
2.86			ITNA	75KLE 01
2.9	0.2	35	ITNA	81GLA 03
3	0.15		ICPES	81CHU 01
3.1			ITNA	75MIL 01
5			SSMS	83WEI 02
5.3	1.2		SSMS	78SUG 02
F (ug/g)				
10			UU	80HEN 01
20			AA	76WEW 01
20	2		ISE	83BET 02

Conc	Uncer	Com	Method	Reference
Fe (%)				
4.23	0.3		PAA	76KAT 03
4.24	0.19		PAA	76KAT 02
4.4			AA	78GUI 01
5.278	0.56		ITNA	73SHE 01
5.53	0.12		ICPES	84NAD 01
5.6	0.2		ITNA	76WEW 01
5.6	2.8		OES	76WEW 01
5.7	0.3		ITNA	76KUC 01
5.8			OES	78SUG 01
5.8			AA	78WEG 01
5.8			ITNA	84CLE 01
5.8	0.3	5	IENA	80GLA 03
5.9	0.2	5	IENA	80GLA 03
5.91	0.16		IENA	77ROW 04
5.93	0.04		ICPES	85HAR 01
5.94			XRF	78CAM 02
5.96	0.16		XRF	79SMI 01
6			XRF	76WEW 01
6			ICPES	80FLO 01
6	0.2		ICPES	80EPS 03
6	0.3		ITNA	76OND 01
6	0.4		AA	79WEG 01
6.03	0.16		ITNA	81WAN 01
6.08	0.52		PAA	74CHA 01
6.09	0.03		ITNA	84GLA 02
6.1	0.1		TCGS	79FAI 01
6.1	0.1	D	TCGS	80AND 01
6.1	0.2	D	PAA	77CHA 01
6.1	0.2		PAA	76CHA 01
6.1	0.3	35	NAA	81GLA 04
6.14	0.07		ICPES	84BOT 01
6.16	0.3		EXRF	78PEL 01
6.17	0.41		ITNA	78NAD 02
6.17	0.41		ITNA	75NAD 02
6.2			EXRF	78WEG 01
6.2			OES	80WAL 01
6.2	0.04		ICPES	80NAD 01
6.2	0.05		ITNA	77ROW 03
6.2	0.05	D	ITNA	77ROW 04
6.2	0.05	D	NAA	79STE 01
6.2	0.1		EXRF	77NIE 01
6.2	0.1		AA	76OND 01
6.2	0.1		AA	77MIT 01
6.2	0.2		FAF	80EPS 04
6.2	0.3	D	NAA	74OND 01
6.2	0.3		ITNA	75OND 01
6.2	0.4	D	ITNA	78RYA 01
6.2	0.4		ITNA	77CHA 01
6.2	0.6		XRF	81COH 02
6.22	0.08		TCGS	79AND 01
6.22	0.48		EXRF	77GIA 01

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference
Fe (%) cont.				
6.23	0.1		ITNA	78LAU 02
6.23	0.14	35	ITNA	81GLA 02
6.3	0.1		ITNA	78MAC 01
6.3	0.15		AA	82HAR 01
6.3	0.4	35	ITNA	81GLA 03
6.32			ICPES	80NAD 01
6.35			ITNA	78WEA 01
6.35	0.12		ITNA	85FIL 01
6.37			ITNA	75KLE 01
6.4			AA	79SIL 01
6.4	0.15		14NAA	81WIL 02
6.46			ICPES	84CLE 01
6.46	0.14		ICPES	81CHU 01
6.5			UU	80HEN 01
6.51	0.31		ITNA	73ABE 01
6.69			ITNA	75MIL 01
6.7		35	TCGS	78GLA 04
6.8	0.03		ITNA	76RAG 01
6.8	0.2		AA	80STO 02
6.95	0.15		14NAA	81WIL 01
7			AA	76WEW 01
Ga (ug/g)				
34.3	1.9		ITNA	81WAN 01
37	2		IENA	78WAN 01
38.3	6.3		ITNA	73SHE 01
40	1		XRF	79SMI 01
40.3	2	5	IENA	76STE 05
40.7	1.2	D	NAA	79STE 01
40.7	1.2		IENA	77ROW 03
40.7	1.2	5	IENA	76STE 05
41	1	35	IENA	81GLA 04
41	7		EXRF	77GIA 01
43	1	35	IENA	80GLA 03
43	1	35	IENA	81GLA 03
45	7		ITNA	76OND 01
45	8		ITNA	85FIL 01
48	6		COLOR	79LIK 01
49			XRF	75KLE 01
50			UU	80HEN 01
58	10		FAA	76OWE 01
68	14		OES	76WEW 01
72			ICPES	80FLO 01

Conc	Uncer	Com	Method	Reference
Gd (ug/g)				
1.9			SSMS	83WEI 02
11			ITNA	75MIL 01
11.4	0.2		TCGS	79FAI 01
11.6	0.1		RTNA	84ODD 01
11.7	0.4		TCGS	79AND 01
11.9	0.2		ITNA	84ODD 01
12.1	0.36		ICPES	81CHU 01
17.5	0.3		TCGS	80AND 01
23	4		SSMS	78SUG 02
Ge (ug/g)				
19	1		XRF	79SMI 01
20			UU	80HEN 01
24			UU	78SIM 01
25	1.4		OES	76WEW 01
25.9	0.7		COLOR	84SHI 01
26	5		EXRF	77GIA 01
26.8	2.6		ICPES	84NAD 02
36			SSMS	83WEI 02
131			FAA	75POL 01
476	166		ITNA	73SHE 01
H (ug/g)				
1000			UU	80HEN 01
1200	400		TCGS	79AND 01
H2O- (%)				
0.03			UU	80HEN 01
H2O-T (%)				
0.17			FD	80KHA 02
H2SO4 (ug/g)				
<	1000	L	UU	80HEN 01
Hf (ug/g)				
4			SSMS	83WEI 02
6.5	0.7		ITNA	76WEW 01
6.7	0.3		IENA	77ROW 03
6.7	0.3	D	IENA	77ROW 04
6.7	0.3	D	NAA	79STE 01
7	0.4		ITNA	77ROW 04
7.2	0.6		ITNA	76RAG 01
7.4	0.5		ITNA	78LAU 02
7.5			ITNA	78NAD 02

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference
Hf (ug/g) cont.				
7.5	0.4		ITNA	78MAC 01
7.5	0.4		ITNA	85FIL 01
7.5	0.5		ITNA	77CHA 01
7.5	0.5	D	ITNA	78RYA 01
7.52	0.02		ITNA	75NAD 02
7.6	0.2		ITNA	84GLA 02
7.62	0.56		ITNA	73SHE 01
7.7	0.1		ITNA	81WAN 01
7.9			ITNA	78WEA 01
7.9	0.4		ITNA	75OND 01
8	0.4	35	ITNA	81GLA 02
8	0.4	35	NAA	81GLA 04
8.1	0.1	35	IENA	80GLA 03
8.2			ITNA	75MIL 01
8.2	0.8		ITNA	73ABE 01
8.2	0.8		ITNA	76OND 01
10			UU	80HEN 01
10	2	35	ITNA	81GLA 03
10.8			ITNA	75KLE 01
Hg (ng/g)				
100			UU	80HEN 01
119	2		CVAA	80NAD 01
120	15		CVAA	82SUL 01
127	3		CVAA	75KLE 01
130	30		PAA	76CHA 01
130	30		NAA	77JER 01
130	30	D	PAA	77CHA 01
134	4		CVAA	74RAI 01
135	10		PAA	74CHA 01
137	15	D	RTNA	81GAL 02
137	15		RTNA	81GAL 01
141	12		FAA	77GLA 03
145			ITNA	78WEA 01
145	6		RTNA	74ORV 01
145	6		RTNA	84DEL 01
160	40		ITNA	77CHA 01
160	40	D	ITNA	78RYA 01
170	20	6	PAA	82SEG 01
200	20		PAA	80SEG 01
200	100	6	PAA	82SEG 01
550			XRF	76WEW 01
3700	1100		ITNA	73SHE 01
11000			XRF	78CAM 02

Conc	Uncer	Com	Method	Reference
Ho (ug/g)				
0.82			SSMS	83WEI 02
1.94	0.13		IENA	77ROW 03
1.94	0.13	D	NAA	79STE 01
1.94	0.13		IENA	76STE 05
1.98	0.01		RTNA	84ODD 01
1.99	0.07		ITNA	84ODD 01
3.6	0.8		SSMS	78SUG 02
I (ug/g)				
<	0.5	L	UU	80HEN 01
<	6	L	EXRF	77GIA 01
2	1.2		ITNA	77MAE 01
2.8	1		PAA	77CHA 01
2.9			ITNA	78WEA 01
2.9	1.2		PAA	75OND 01
3	1		ITNA	77CHA 01
3	1	D	ITNA	78RYA 01
3.4			SSMS	83WEI 02
In (ng/g)				
118	4	5	IENA	76STE 05
128	8	5	IENA	76STE 05
128	8	D	NAA	79STE 01
128	8		IENA	77ROW 03
156	35		ITNA	73SHE 01
160	20		ITNA	81WAN 01
270	140		ITNA	76RAG 01
280	30		PAA	74CHA 01
290	60		PAA	76CHA 01
290	60	D	PAA	77CHA 01
320	80	D	ITNA	78RYA 01
320	80		ITNA	77CHA 01
320	100		ITNA	75OND 01
3000	2000		EXRF	77GIA 01
Ir (ng/g)				
<	200	L	UU	80HEN 01
15.6	2.4		RTNA	77NAD 02
18.6			ITNA	78WEA 01
18.6	3.3		ITNA	73SHE 01
250	80		ITNA	77CHA 01
250	80	D	ITNA	78RYA 01

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference
K (%)				
1.29	0.09		ITNA	76KUC 01
1.51			ICPES	80NAD 01
1.51	0.05		ITNA	78MAC 01
1.54	0.04		ITNA	76BLO 01
1.56			ICPES	84CLE 01
1.58	0.15		ITNA	75OND 01
1.59	0.05		PAA	76KAT 02
1.59	0.05		PAA	76KAT 03
1.6			OES	80WAL 01
1.6	0.04		ICPES	81CHU 01
1.6	0.06		PAA	76CHA 01
1.6	0.06	D	PAA	77CHA 01
1.6	0.12		AA	80STO 02
1.61			ITNA	78WEA 01
1.63			XRF	78CAM 02
1.63	0.06		ITNA	77MAE 01
1.64	0.01		AA	82HAR 01
1.65	0.09		ITNA	78LAU 02
1.66	0.04		XRF	79SMI 01
1.67	0.06		EXRF	78PEL 01
1.67	0.07		ICPES	84BOT 01
1.68			AA	79SIL 01
1.69		35	TCGS	78GLA 04
1.69	0.13	D	ITNA	78RYA 01
1.69	0.13		ITNA	77CHA 01
1.7			ITNA	78KEL 02
1.7	0.2		ITNA	76OND 01
1.71	0.03		GAMMA	75OND 01
1.71	0.03		GAMMA	73ABE 01
1.71	0.04		AA	76OND 01
1.71	0.1		ICPES	84NAD 01
1.72	0.09		ICPES	80NAD 01
1.73	0.18		ITNA	81WAN 01
1.74	0.07		EXRF	77NIE 01
1.75			UU	80HEN 01
1.75	0.1		TCGS	79AND 01
1.75	0.18		ITNA	76RAG 01
1.76	0.05	D	TCGS	80AND 01
1.76	0.05		TCGS	79FAI 01
1.76	0.19		ITNA	85FIL 01
1.77			ITNA	75MIL 01
1.78	0.23		ITNA	75NAD 02
1.78	0.24		ITNA	78NAD 02
1.8			ITNA	75KLE 01
1.8	0.1		ICPES	85HAR 01
1.8	0.13		ITNA	77ROW 03
1.8	0.13	D	NAA	79STE 01
1.8	0.13		ITNA	76STE 05
1.8	0.3		14NAA	81WIL 02
1.81	0.15	35	ITNA	81GLA 03
1.83	0.05	35	IENA	80GLA 03
K (%) cont.				
1.9	0.5		14NAA	81WIL 01
1.97		35	ITNA	81GLA 04
2.18	0.24		ITNA	73SHE 01
3.3	0.66		OES	76WEW 01
La (ug/g)				
45	4.5		OES	76WEW 01
64	2		ITNA	78NAD 02
64.1	1.6		ITNA	75NAD 02
68	2		ITNA	78MAC 01
68	5		ICPES	85HAR 01
70			UU	80HEN 01
71.9			ITNA	84GLA 02
72	6		XRF	79SMI 01
74	4		ITNA	78LAU 02
74.8			ITNA	82GLA 02
75	4	35	ITNA	81GLA 03
76	14		ITNA	76OND 01
76.4	4.5		ITNA	81WAN 01
77	8		ITNA	73SHE 01
78			XRF	78CAM 02
78			ICPES	80FLO 01
79	1.6		ICPES	81CHU 01
79	6	35	IENA	80GLA 03
80			ITNA	75MIL 01
81	2		ITNA	76RAG 01
81	3	D	NAA	79STE 01
81.2	3.2		IENA	76STE 05
81.2	3.3		IENA	77ROW 03
82			ITNA	78WEA 01
82			ITNA	75KLE 01
82	2		ITNA	75OND 01
82	4		ITNA	73ABE 01
82	20		EXRF	77GIA 01
83	0.9		ITNA	85FIL 01
84	2		RTNA	84ODD 01
84	3.6		IENA	77ROW 04
84	3.6		ITNA	77ROW 03
85	3		ITNA	84ODD 01
85	4	D	ITNA	78RYA 01
85	4		ITNA	77CHA 01
85.3	3.8		ITNA	77ROW 04
86	2		ITNA	76WEW 01
91	7		ITNA	76STE 05
110	20		SSMS	78SUG 02
120			SSMS	83WEI 02

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference
Li (ug/g)				
1.7	0.3		ICPES	81CHU 01
80			AA	76WEW 01
140	9		OES	76WEW 01
161	14		ICPES	84BOT 01
186			ICPES	84CLE 01
300			UU	80HEN 01
Lu (ug/g)				
0.78			SSMS	83WEI 02
0.87			ITNA	82GLA 02
0.9	0.3		ITNA	81WAN 01
0.94	0.09	D	ITNA	77ROW 04
0.94	0.09		ITNA	77ROW 03
0.94	0.09	D	NAA	79STE 01
1	0.1		ITNA	75OND 01
1	0.2		ITNA	76WEW 01
1.01	0.02		ITNA	78NAD 02
1.01	0.02		ITNA	75NAD 02
1.1		35	ITNA	81GLA 03
1.1	0.15	D	ITNA	78RYA 01
1.1	0.15		ITNA	77CHA 01
1.11	0.22		ITNA	84GLA 11
1.2			ITNA	75MIL 01
1.56	0.01		RTNA	84ODD 01
1.68	0.06		ITNA	84ODD 01
1.7	0.4		SSMS	78SUG 02
2	0.05		ITNA	78LAU 02
3.8	0.5		ITNA	73SHE 01
4	1		ITNA	78MAC 01
Mg (%)				
0.84	0.05		AA	82HAR 01
1.01			ICPES	80NAD 01
1.2	0.1		AA	76OND 01
1.22			AA	79SIL 01
1.25	0.06		ICPES	85HAR 01
1.29	0.02		ICPES	80NAD 01
1.29	0.03		ICPES	84BOT 01
1.3	0.04		ICPES	84NAD 01
1.32	0.04		ICPES	81CHU 01
1.34			ICPES	84CLE 01
1.4			OES	78SUG 01
1.4	0.4		ITNA	78LAU 02
1.4	0.4		ITNA	77MAE 01
1.44	0.02		PAA	76KAT 03
1.45	0.05		AA	80STO 02
1.48	0.01		PAA	74CHA 01
1.5	0.01		PAA	76KAT 02
1.5	0.15	D	PAA	77CHA 01
Mg (%) cont.				
1.5	0.15		PAA	76CHA 01
1.5	0.2		TCGS	79FAI 01
1.5	0.2	D	TCGS	80AND 01
1.5	0.3		ITNA	76WEW 01
1.5	1.3		14NAA	81WIL 01
1.52	0.06		ITNA	75NAD 02
1.52	0.06		ITNA	78NAD 02
1.597	0.806		ITNA	73SHE 01
1.6	0.32		OES	76WEW 01
1.68	0.21		ITNA	77CHA 01
1.68	0.21	D	ITNA	78RYA 01
1.78	0.2		ITNA	76STE 05
1.78	0.2		ITNA	77ROW 03
1.78	0.2	D	NAA	79STE 01
1.8			ICPES	80FLO 01
1.8			OES	80WAL 01
1.8			ITNA	78WEA 01
1.8	0.4		ITNA	75OND 01
2			UU	80HEN 01
2	0.4		ITNA	76RAG 01
2.08	0.43		ITNA	73ABE 01
2.1	0.5		14NAA	81WIL 02
2.19	0.35		ITNA	81WAN 01
2.4		35	TCGS	78GLA 04
6.3	0.3		ITNA	78MAC 01
Mn (ug/g)				
351		6	SSMS	78GUI 01
388			ICPES	84SOB 01
420			ITNA	78KEL 02
422.4	3.9		AA	77MIT 01
440			AA	78WEG 01
460			ITNA	75KLE 01
460	26		OES	76WEW 01
464	1		ITNA	78NAD 02
464	1.4		ITNA	75NAD 02
464	46		ITNA	76KUC 01
465			ICPES	84CLE 01
466	31		ITNA	73SHE 01
470	20		ICPES	85HAR 01
477	5		AA	76OND 01
478			FAA	78GUI 01
480	10		ITNA	76BLO 01
480	25	D	TCGS	80AND 01
480	25		TCGS	79FAI 01
482			ICPES	80NAD 01
483	12		ICPES	84NAD 01
483	21		XRF	79SMI 01
485			AA	79SIL 01
488	14		ITNA	77ROW 03

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference
Mn (ug/g) cont.				
488	14	D	NAA	79STE 01
488	14		ITNA	76STE 05
488	50		ITNA	81WAN 01
489	11		ITNA	73ABE 01
490			SSMS	83WEI 02
490	14		ICPES	84BOT 01
491	10		PAA	76KAT 02
491	18		PAA	76KAT 03
492			AA	78GUI 01
492	7		AA	82HAR 01
493	4.1		AA	74RAI 01
495			ITNA	78WEA 01
495	15		PAA	76CHA 01
495	15	D	PAA	77CHA 01
495	25		PAA	74CHA 01
496			OES	80WAL 01
496	19	D	NAA	74OND 01
496	19		ITNA	75OND 01
498	11	35	ITNA	81GLA 03
499	22	6	FAA	79GEL 01
499	25		ITNA	76OND 01
500			OES	78SUG 01
500			EXRF	78WEG 01
500			UU	80HEN 01
500	15		ITNA	77CHA 01
500	15	D	ITNA	78RYA 01
500	17		EXRF	78PEL 01
503	15		ITNA	77MAE 01
504	25		ITNA	76WEW 01
505	9	35	ITNA	81GLA 02
505	14		ITNA	76RAG 01
506			AA	76WEW 01
508			XRF	78CAM 02
510			ICPES	80FLO 01
510	10		ITNA	78LAU 02
510	70		XRF	81COH 02
513	15	35	IENA	80GLA 03
516	16		ICPES	81CHU 01
520	6		FAA	76OWE 01
520	20		ITNA	78MAC 01
528		6	SSMS	78GUI 01
528	104		EXRF	77GIA 01
530	30		AA	80STO 02
531	14		EXRF	77NIE 01
540			ITNA	75MIL 01
570	24	6	FAA	79GEL 01

Conc	Uncer	Com	Method	Reference
Mo (ug/g)				
0.5	0.08	D	PAA	77CHA 01
0.5	0.08		PAA	76CHA 01
1.52	0.15		PAA	74CHA 01
20			ITNA	78WEA 01
20			UU	80HEN 01
22.3	1.6		14NAA	81WIL 02
25	5		EXRF	77GIA 01
25.3	1.6	D	NAA	79STE 01
25.3	1.6		IENA	77ROW 03
25.3	1.6	D	IENA	77ROW 04
26			SSMS	83WEI 02
26	2		ICPES	84BOT 01
28	1		XRF	79SMI 01
28	1	35	IENA	80GLA 03
28	1	35	IENA	81GLA 03
28	1.3		14NAA	81WIL 01
32			ICPES	80NAD 01
36	3	35	RTNA	78GLA 02
36	5		FAA	76OWE 01
37	1.3		OES	76WEW 01
N (ug/g)				
<	1000	L	UU	80HEN 01
Na (ug/g)				
2603	156		ITNA	76KUC 01
2658	129		ITNA	73SHE 01
2800	300		ITNA	76BLO 01
2820	50		ITNA	78MAC 01
2830	136		ITNA	76STE 05
2830	140	D	NAA	79STE 01
2830	140		ITNA	77ROW 03
2900			ICPES	80NAD 01
2900			OES	78SUG 01
3000			AA	79SIL 01
3000			OES	80WAL 01
3000			UU	80HEN 01
3000	70		ICPES	81CHU 01
3000	100		ITNA	78LAU 02
3000	200		TCGS	79FAI 01
3000	200	D	TCGS	80AND 01
3000	200		ICPES	84NAD 01
3052	264		ITNA	81WAN 01
3070	80		ITNA	77MAE 01
3100	200		ICPES	80NAD 01
3100	300		ITNA	76OND 01
3130			ITNA	84GLA 02
3150	110		14NAA	81WIL 01
3200			SSMS	83WEI 02

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference
Na (ug/g) cont.				
3200			ITNA	78WEA 01
3200	200		AA	76OND 01
3200	200		AA	82HAR 01
3200	200		ICPES	84BOT 01
3200	300	D	ITNA	78RYA 01
3200	300		ITNA	77CHA 01
3200	400		ITNA	75OND 01
3220	50	35	ITNA	81GLA 03
3230			ICPES	84CLE 01
3240	100		ITNA	76RAG 01
3290	110		AA	80STO 02
3300	100	35	ITNA	81GLA 02
3300	100		ICPES	85HAR 01
3300	150		PAA	76CHA 01
3300	150	D	PAA	77CHA 01
3300	200		ITNA	78NAD 02
3300	200		ITNA	75NAD 02
3330	170		14NAA	81WIL 02
3400			ITNA	75MIL 01
3400	300		ITNA	76WEW 01
3400	300		PAA	74CHA 01
3600		35	TCGS	78GLA 04
3700	200		ITNA	73ABE 01
3850	210		PAA	76KAT 03
3860	130		PAA	76KAT 02
9700	1900		OES	76WEW 01
Nb (ug/g)				
<	100	L	OES	76WEW 01
7			UU	80HEN 01
26	1		XRF	79SMI 01
28	2		EXRF	77GIA 01
56			SSMS	83WEI 02
Nd (ug/g)				
57.8	1.6	D	ITNA	77ROW 04
57.8	1.6		ITNA	77ROW 03
58	2	D	NAA	79STE 01
58	10		ITNA	81WAN 01
60		35	IENA	81GLA 04
60			SSMS	83WEI 02
60	2	35	IENA	80GLA 03
60.5	1.5		ITNA	75NAD 02
61	2		ITNA	78NAD 02
62	2		TCGS	80AND 01
62.1	2.4		TCGS	79FAI 01
66	7		ITNA	76OND 01
67	2		RTNA	84ODD 01
69	4		ITNA	84ODD 01
Nd (ug/g) cont.				
69	7		ITNA	77CHA 01
69	7	D	ITNA	78RYA 01
81			ITNA	75MIL 01
90	13		SSMS	78SUG 02
94	19		ICPES	81CHU 01
NH4 (ug/g)				
<	100	L	UU	80HEN 01
Ni (ug/g)				
69	7		IENA	77ROW 03
78			AA	76WEW 01
84	2	35	IENA	81GLA 04
84	6	35	IENA	80GLA 03
85			AA	78GUI 01
88	2		ICPES	84BOT 01
92	6		PAA	75OND 01
92	9	6	PAA	82SEG 01
93			EXRF	78WEG 01
93	5	8	SSMS	80KOP 01
94			XRF	78CAM 02
94			ICPES	80FLO 01
95	9	D	ITNA	78RYA 01
95	9		ITNA	77CHA 01
95	20		EXRF	78PEL 01
96	3		PAA	76KAT 02
96	5		XRF	79SMI 01
96	5		PAA	76KAT 03
96	5		ICPES	85HAR 01
96.4	1.2	6	IDMS	74MOO 01
96.4	1.2	6	IDMS	74MOO 01
96.6	1	6	IDMS	74MOO 01
96.8	3.2		PAA	74CHA 01
97	5		PAA	76CHA 01
97	5	D	PAA	77CHA 01
98			POL	74MAI 01
98			FAA	80WAL 01
98	9	D	NAA	74OND 01
98.5	9.5		IENA	77ROW 04
99			AA	79SIL 01
99	4		AF	80EPS 02
99	9	D	NAA	79STE 01
99.7	3.3		AA	77MIT 01
100			UU	80HEN 01
100			ICPES	84CLE 01
100	3		ICPES	81CHU 01
100	5		ITNA	75NAD 02
100	5		ITNA	78NAD 02
100	7	6	PAA	82SEG 01

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference
Ni (ug/g) cont.				
100	7		AA	76OND 01
100	20		ITNA	76OND 01
101	3.3		AA	74RAI 01
101	7		EXRF	77GIA 01
105	3		14NAA	81WIL 01
105	13		ITNA	75OND 01
106			FAA	78GUI 01
106	12		14NAA	81WIL 02
109			XRF	75KLE 01
110			SSMS	83WEI 02
110	7		PAA	80SEG 01
110	10	9	ITNA	78LAU 02
120			OES	78SUG 01
120	7.5		OES	76WEW 01
121	21		ITNA	85FIL 01
128			ICPES	80NAD 01
330			ICPES	84SOB 01
NO2 (ug/g)				
< 100		L	UU	80HEN 01
NO3 (ug/g)				
< 100		L	UU	80HEN 01
O (%)				
47.02	0.08	34	14NAA	80KHA 02
Os (ng/g)				
< 400		L	UU	80HEN 01
< 4000			RTNA	77NAD 02
P (ug/g)				
750	50		ICPES	85HAR 01
880			AA	76WEW 01
898			ICPES	80NAD 01
910	30		ICPES	84BOT 01
1040	70		ICPES	84NAD 01
1090	26		ICPES	81CHU 01
1200			UU	80HEN 01
1300			SSMS	83WEI 02
1900	100		COLOR	80NAD 01
3000		35	TCGS	78GLA 04

Conc	Uncer	Com	Method	Reference
Pb (ug/g)				
40		6	SSMS	78GUI 01
46		13	ICPES	84BOT 01
55			FAA	75POL 01
62			AA	78GUI 01
62.8			FAA	78GUI 01
64	13		ICPES	81CHU 01
65			EXRF	78WEG 01
66	6		XRF	79SMI 01
66	12		EXRF	78PEL 01
67			POL	74MAI 01
68	4		PAA	80SEG 01
68	4	6	PAA	82SEG 01
68	5	13	ICPES	84BOT 01
68	6	8	SSMS	80KOP 01
68.8			POT	82CHR 01
69	4	6	PAA	82SEG 01
70			AA	79SIL 01
70			AA	78GEL 01
70		6	SSMS	78GUI 01
70.5			FAA	78SIE 01
70.7	2.6		PAA	74CHA 01
71	3		NAA	77JER 01
71	3		PAA	76CHA 01
71	3	D	PAA	77CHA 01
72	5		EXRF	77GIA 01
74	4		FAA	76BLO 01
74	4		FAA	75BLO 02
74	9		OES	76WEW 01
75			OES	80WAL 01
75	5		PAA	75OND 01
75	5	D	NAA	74OND 01
76			AE+AF	77FEL 01
77			ICPES	80NAD 01
77	6		AA	80STO 02
78	2		IDMS	78CAR 02
78	2		AA	76OND 01
78	4		IDMS	75KLE 01
79.6	9.7		HAA	82NAD 01
80			UU	80HEN 01
80	10		ICPES	85HAR 01
81			ICPES	80FLO 01
81			AA	78WEG 01
82			AA	76WEW 01
82	6		FAA	76OWE 01
100	25		14NAA	81WIL 02
110			SSMS	83WEI 02
Pb-21 (pCi/g)				
3.37	0.13	D	NM	81CAS 01
3.37	0.13		NM	80CAS 01

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference
Pd (ng/g)				
< 2			RTNA	77NAD 02
< 1000		L	UU	80HEN 01
< 4000		L	EXRF	77GIA 01
Pr (ug/g)				
< 100		L	OES	76WEW 01
24			ICPES	80FLO 01
28	6		SSMS	78SUG 02
40			SSMS	83WEI 02
92	1		RTNA	84ODD 01
Pt (ug/g)				
< 90		L	OES	76WEW 01
0.4			UU	80HEN 01
0.451	0.011		RTNA	77NAD 01
1.38	0.28		RTNA	77NAD 02
Rb (ug/g)				
70	30		ITNA	81WAN 01
95	1		PAA	76KAT 02
96	2		PAA	76KAT 03
100	10	9	ITNA	78LAU 02
102	5		14NAA	81WIL 02
105	10		ITNA	76RAG 01
108	4	D	NAA	79STE 01
108	4		EXRF	77GIA 01
108.4	3.7		IENA	77ROW 03
108.4	3.7	D	IENA	77ROW 04
110	2		XRF	79SMI 01
110	9		ITNA	77ROW 04
110	22		OES	76WEW 01
111	7		ITNA	84GLA 02
111	13.5		ITNA	75NAD 02
111	14		ITNA	78NAD 02
112	20		ITNA	76WEW 01
114			XRF	78CAM 02
115	10		ITNA	78LAU 02
115	15		ITNA	73SHE 01
116	10		ITNA	77CHA 01
116	10	D	ITNA	78RYA 01
117	6	35	IENA	80GLA 03
118	7	35	NAA	81GLA 04
119	7	35	ITNA	81GLA 02
120			XRF	75KLE 01
120			SSMS	83WEI 02
120	10		PAA	76CHA 01
120	10	D	PAA	77CHA 01
123	9	35	ITNA	81GLA 03
Rb (ug/g) cont.				
124	10		ITNA	73ABE 01
125			ITNA	78WEA 01
125	4		EXRF	77NIE 01
125	10		ITNA	75OND 01
126	10		PAA	75OND 01
130	30		ITNA	76OND 01
136	6		ITNA	85FIL 01
137	4		14NAA	81WIL 01
150			UU	80HEN 01
Re (ng/g)				
< 200		L	UU	80HEN 01
Rh (ug/g)				
< 0.5		L	UU	80HEN 01
< 4		L	EXRF	77GIA 01
< 30		L	OES	76WEW 01
Ru (ug/g)				
< 0.5		L	UU	80HEN 01
< 30		L	OES	76WEW 01
0.258	0.02		RTNA	77NAD 02
3	2		EXRF	77GIA 01
S (ug/g)				
2000			XRF	81COH 02
3900	400		TCGS	79FAI 01
3900	400	D	TCGS	80AND 01
4000	400		TCGS	79AND 01
4400	100		TCGS	77JUR 01
4930	490	7	NM	83LI 01
5090	530	7	NM	83LI 01
7800			XRF	78CAM 02
9000	500		XRF	79SMI 01
Sb (ug/g)				
4	3		EXRF	77GIA 01
5			ICPES	82NYG 01
5.9	0.3		ITNA	81WAN 01
5.9	0.5	5	IENA	77ROW 04
5.9	0.5	5	ITNA	77ROW 04
5.96	0.61		HAA	82NAD 01
6	0.2		IENA	77ROW 03
6	0.2	D	NAA	79STE 01
6.03	0.23	5	IENA	77ROW 04
6.1	0.4	5	ITNA	77ROW 04

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference
Sb (ug/g) cont.				
6.2		35	ITNA	81GLA 03
6.4	0.2		ITNA	78LAU 02
6.5	0.2	35	RTNA	78GLA 02
6.6	0.3		ITNA	85FIL 01
6.72	0.35		ITNA	75NAD 02
6.72	0.35		ITNA	78NAD 02
6.9			ITNA	78WEA 01
6.9			SSMS	83WEI 02
6.9	0.3		ITNA	76OND 01
6.9	0.5	D	ITNA	78RYA 01
6.9	0.5		ITNA	77CHA 01
6.9	0.6		ITNA	76RAG 01
6.9	0.6		ITNA	75OND 01
7			UU	80HEN 01
7	1.1		PAA	75OND 01
7	1.2		PAA	76KAT 03
7.1	0.5	D	PAA	77CHA 01
7.1	0.5		PAA	76CHA 01
7.1	0.5		NAA	77JER 01
7.1	0.7		PAA	76KAT 02
7.14	0.56		PAA	74CHA 01
7.2	0.3	35	ITNA	81GLA 02
7.2	0.3	35	NAA	81GLA 04
7.2	0.8		ITNA	73ABE 01
7.3	0.3		FAA	78HAY 01
7.4	0.3		ITNA	78MAC 01
7.7	0.5	35	IENA	80GLA 03
7.8			ITNA	75KLE 01
7.9			ITNA	84CLE 01
8.3	1.8		14NAA	81WIL 02
8.4	3	13	ICPES	84BOT 01
9.8	2.1		ITNA	76WEW 01
12.08	0.86		ITNA	73SHE 01
17.4			FAA	75POL 01
54		13	ICPES	84BOT 01
Sc (ug/g)				
20			ICPES	80FLO 01
20			UU	80HEN 01
20.7	2.1		PAA	74CHA 01
23	0.4		ITNA	76BLO 01
23	2.3		OES	76WEW 01
24	1		ITNA	76WEW 01
24	2		ICPES	85HAR 01
25.1	0.5		ITNA	75NAD 02
25.1	0.5		ITNA	78NAD 02
25.5	2	D	ITNA	78RYA 01
25.5	2		ITNA	77CHA 01
25.6	0.5		IENA	77ROW 04
26	2	35	IENA	80GLA 03

Conc	Uncer	Com	Method	Reference
Sc (ug/g) cont.				
26.5	0.2		ITNA	84GLA 02
26.7	0.2	D	ITNA	77ROW 04
26.7	0.2		ITNA	77ROW 03
26.7	0.7	D	NAA	79STE 01
26.8	0.2		ITNA	78MAC 01
26.9	0.3		ITNA	81WAN 01
26.9	1.4		ITNA	76OND 01
27			ITNA	78WEA 01
27	0.5		ITNA	78LAU 02
27	0.6		ITNA	76RAG 01
27	1		ITNA	75OND 01
27	1		ITNA	73ABE 01
27	2	D	PAA	77CHA 01
27	2		PAA	76CHA 01
27.5	2.4		ITNA	73SHE 01
28	1	35	ITNA	81GLA 02
28.3	0.7	35	ITNA	81GLA 04
29	3		14NAA	81WIL 02
29.1			ITNA	75MIL 01
30	1	35	ITNA	81GLA 03
30	2		ITNA	85FIL 01
32			ITNA	75KLE 01
41	5		14NAA	81WIL 01
45			SSMS	83WEI 02
Se (ug/g)				
3.2			HAA	74BYR 02
4.5	0.7		ASV	76AND 01
5.5	3.4		ITNA	81WAN 01
8.7	1.8		ITNA	78MAC 01
8.76	0.48		HAA	82NAD 01
8.8			XRF	78CAM 02
8.8	0.7	9	ITNA	80WAN 01
8.8	1.2		ITNA	73ABE 01
8.9	0.6		ITNA	80WAN 01
8.9	1.2		XRF	79SMI 01
9			ICPES	82NYG 01
9	1.4		ITNA	76RAG 01
9	2	35	IENA	80GLA 03
9.1	0.2		ITNA	78NAD 02
9.1	0.2		ITNA	75NAD 02
9.1	0.2		ITNA	81CAR 02
9.1	0.3	35	HAA	81GLA 04
9.1	1		RTNA	74ORV 01
9.2	2.6		ICPES	84BOT 01
9.35	0.03		GCMES	75KLE 01
9.35	0.03		GCMES	74TAL 02
9.35	0.03		DCPES	81CAR 02
9.4			SSMS	83WEI 02
9.48	0.8		PAA	74CHA 01

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference
Se (ug/g) cont.				
9.5	0.8		PAA	76CHA 01
9.5	0.8	D	PAA	77CHA 01
9.6	3.1		ITNA	76BLO 01
9.7			COLOR	74BYR 02
9.8			ITNA	78WEA 01
9.8	0.5	6	PAA	82SEG 01
9.8	1		ITNA	77CHA 01
9.8	1	D	ITNA	78RYA 01
10			UU	80HEN 01
10	0.5	9	ITNA	78LAU 02
10	0.5	8	SSMS	80KOP 01
10	0.6		RTNA	80KNA 01
10	0.9		PAA	80SEG 01
10	0.9	6	PAA	82SEG 01
10	2		ITNA	76OND 01
10.1	2.2		ITNA	76WEW 01
10.2			HAA	80WAL 01
10.2	1.4		ITNA	75OND 01
10.2	1.4	D	NAA	74OND 01
10.3	0.7	D	RTNA	81GAL 02
10.3	0.7		RTNA	81GAL 01
10.6	1		ITNA	78LAU 02
10.6	1.3		ITNA	77ROW 04
10.7	0.4		ITNA	85FIL 01
10.8	0.8	D	NAA	79STE 01
10.8	0.8	D	IENA	77ROW 04
10.8	0.8		IENA	77ROW 03
11	1		EXRF	77GIA 01
11	3		ITNA	76KUC 01
12.7	1.8		ITNA	73SHE 01
13.3			ITNA	84CLE 01
35	13		14NAA	81WIL 02
35	13		14NAA	81WIL 01
Si (%)				
16			OES	78SUG 01
17	3.4		OES	76WEW 01
17.7		35	TCGS	78GLA 04
20	1.6		PAA	76CHA 01
20	1.6	D	PAA	77CHA 01
20.4			ICPES	80NAD 01
20.9			UU	80HEN 01
21	2		PAA	75OND 01
21.5	1.4		XRF	79SMI 01
21.8	0.3		TCGS	80AND 01
21.8	0.3		TCGS	79FAI 01
21.9			XRF	78CAM 02
22	1	35	AA	81GLA 03
22.4	0.3		ICPES	80NAD 01
22.4	1.6		14NAA	81WIL 02
22.6			AA	79SIL 01
22.7	0.05		ICPES	84NAD 01
22.8	0.8		14NAA	81WIL 01
23	1		EXRF	77NIE 01
23	6		14NAA	76BLO 01
23.5	0.5	35	IENA	80GLA 03
24.5	1.1		TCGS	79AND 01
Sm (ug/g)				
10.05	0.58		ITNA	73SHE 01
10.4	0.9		IENA	77ROW 04
11	1		ITNA	78MAC 01
11.4	1.6		IENA	76STE 05
11.8	1.6		IENA	77ROW 03
12.1	0.4		TCGS	79FAI 01
12.1	0.4	D	TCGS	80AND 01
12.1	1	D	ITNA	78RYA 01
12.1	1		ITNA	77CHA 01
12.1	1.4	D	NAA	79STE 01
12.1	1.4		ITNA	77ROW 04
12.3	0.6		RTNA	84ODD 01
12.4			ITNA	78WEA 01
12.4	0.5		ITNA	73ABE 01
12.4	0.9		ITNA	75OND 01
12.8	0.6		ITNA	76WEW 01
12.9	0.3		ITNA	84ODD 01
13			ITNA	84GLA 02
13	0.3		TCGS	79AND 01
13	0.7		ITNA	76RAG 01
13	1.3		ITNA	85FIL 01
13.2			ITNA	82GLA 02
13.4	0.7		ITNA	76OND 01
13.5	0.5		ITNA	78LAU 02
13.6	0.88		ITNA	75NAD 02
13.6	0.9		ITNA	78NAD 02
14.9	1	35	ITNA	81GLA 03
15			ITNA	75KLE 01
15.8	0.3		ICPES	81CHU 01
17			SSMS	83WEI 02
20	3		SSMS	78SUG 02

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference
Sn (ug/g)				
<	5		ICPES	84CLE 01
2.8			SSMS	83WEI 02
3			UU	80HEN 01
5	2		EXRF	77GIA 01
5.7	0.6		NM	81IMU 01
6.7	1.4		XRF	79SMI 01
10	5		OES	76WEW 01
10.2	1.4		ITNA	77CHA 01
10.2	1.4	D	ITNA	78RYA 01
12	1		PAA	76CHA 01
12	1	D	PAA	77CHA 01
12.5	1.2		PAA	74CHA 01
12.7	0.82		HAA	82NAD 01
740	210		ITNA	73SHE 01
SO4 (%)				
0.98			UU	80HEN 01
Sr (ug/g)				
126			EXRF	78WEG 01
869	33		ITNA	73SHE 01
1200	300		ITNA	76STE 05
1240	30		ICPES	84BOT 01
1244	6		PAA	76KAT 02
1244	9		PAA	76KAT 03
1250	230		ITNA	76RAG 01
1256	37		EXRF	78PEL 01
1260		35	IENA	81GLA 03
1260	30	5	IENA	80GLA 03
1300		35	IENA	81GLA 04
1300	200		ITNA	76OND 01
1301			XRF	75KLE 01
1310	50		14NAA	81WIL 01
1310	60		14NAA	81WIL 02
1340			AA	79SIL 01
1340	70		ICPES	85HAR 01
1340	100		ITNA	78MAC 01
1342	20		EXRF	77GIA 01
1360	110	5	IENA	76STE 05
1370	120	D	PAA	77CHA 01
1370	120		PAA	76CHA 01
1373	95		PAA	74CHA 01
1375	28		ICPES	81CHU 01
1380			ICPES	84CLE 01
1390			ITNA	75MIL 01
1390			XRF	78CAM 02
1400			SSMS	83WEI 02
1406	80		ITNA	75NAD 02
1406	80		ITNA	78NAD 02

Conc	Uncer	Com	Method	Reference
Sr (ug/g) cont.				
1410	400		14NAA	77VAN 01
1430	30		XRF	79SMI 01
1430	60	5	IENA	76STE 05
1430	60	D	NAA	79STE 01
1460	280		ITNA	85FIL 01
1480	50		ITNA	77MAE 01
1480	60		IENA	77ROW 03
1480	60		ITNA	77ROW 04
1500			UU	80HEN 01
1500	180	D	ITNA	78RYA 01
1500	180		ITNA	77CHA 01
1500	200		ITNA	78LAU 02
1510	60	5	IENA	80GLA 03
1520	35		IENA	77ROW 04
1541	188		ITNA	81WAN 01
1600	100	9	ITNA	78LAU 02
1620			ICPES	80FLO 01
1700	300		ITNA	75OND 01
1900	200		ITNA	73ABE 01
2300	1100		OES	76WEW 01
8000			XRF	76WEW 01
Ta (ug/g)				
1.6			ITNA	75KLE 01
1.74	0.1	35	ITNA	81GLA 02
1.74	0.12	35	NAA	81GLA 04
1.8			ITNA	78WEA 01
1.8	0.2	35	IENA	80GLA 03
1.8	0.3		ITNA	76OND 01
1.8	0.3		ITNA	75OND 01
1.81	0.08		ITNA	84GLA 02
1.84	0.09		ITNA	85FIL 01
1.9	0.1		ITNA	78LAU 02
1.9	0.2	35	ITNA	81GLA 03
1.9	0.25	D	ITNA	78RYA 01
1.9	0.25		ITNA	77CHA 01
2.0			UU	80HEN 01
2.00	0.06		IENA	77ROW 03
2.00	0.06	D	NAA	79STE 01
2.00	0.06	D	IENA	77ROW 04
2.00	0.1		ITNA	78MAC 01
2.00	0.2		ITNA	76RAG 01
2.01	0.14		ITNA	77ROW 04
2.04	0.03		ITNA	78NAD 02
2.04	0.03		ITNA	75NAD 02
2.1	0.2		ITNA	81WAN 01
2.2			ITNA	75MIL 01
2.74	0.25		ITNA	73SHE 01
3.5	0.3		ITNA	73ABE 01

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference
Tb (ug/g)				
0.22	0.04		ITNA	73SHE 01
1.2	0.2		ITNA	78MAC 01
1.5	0.3		ITNA	81WAN 01
1.5	0.4		ITNA	76OND 01
1.53	0.11		ITNA	84GLA 02
1.7	0.8		ITNA	85FIL 01
1.8			ITNA	75MIL 01
1.87	0.15		ITNA	76RAG 01
1.9			SSMS	83WEI 02
1.9	0.1		ITNA	78LAU 02
1.9	0.3		ITNA	75OND 01
1.99	0.16		ITNA	77ROW 04
2	0.1	35	NAA	81GLA 04
2	0.1	35	IENA	80GLA 03
2	0.25	D	ITNA	78RYA 01
2	0.25		ITNA	77CHA 01
2	0.3		ITNA	73ABE 01
2.01	0.06	D	IENA	77ROW 04
2.01	0.06		IENA	77ROW 03
2.01	0.06	D	NAA	79STE 01
2.4	0.1		ITNA	84ODD 01
2.5	0.1		RTNA	84ODD 01
3.12	0.02		ITNA	75NAD 02
3.12	0.02		ITNA	78NAD 02
3.3	0.5		SSMS	78SUG 02
Te (ug/g)				
<	0.5	L	UU	80HEN 01
<	5	L	EXRF	77GIA 01
0.92	0.05		HAA	82NAD 01
2.3	0.3		PAA	76CHA 01
2.3	0.3	D	PAA	77CHA 01
2.32	0.2		PAA	74CHA 01
9.9	1.1	35	RTNA	75GLA 01
Th (ug/g)				
20			UU	80HEN 01
21	3		EXRF	77GIA 01
22.8	0.5		ITNA	76BLO 01
23	2		ITNA	85FIL 01
23.6	0.8		ITNA	76RAG 01
23.8	0.4		ITNA	77ROW 04
24	0.5		IENA	77ROW 03
24	0.5	D	IENA	77ROW 04
24	0.5	D	NAA	79STE 01
24	0.8		ITNA	81WAN 01
24	1	35	ITNA	81GLA 03
24	1		ITNA	78LAU 02
24	1	35	IENA	80GLA 03

Conc	Uncer	Com	Method	Reference
Th (ug/g) cont.				
24	2	35	RTNA	78GLA 02
24	2		ITNA	76OND 01
24.4	2.2		ITNA	75OND 01
24.5	0.4		ITNA	84GLA 02
25	0.9	35	NAA	81GLA 04
25	1	35	ITNA	81GLA 02
25	2		ITNA	73SHE 01
26			ITNA	75MIL 01
26			ITNA	75KLE 01
26			DNA	75MIL 01
26.2	1.3		GAMMA	73ABE 01
26.2	1.3		GAMMA	75OND 01
28			SSMS	83WEI 02
28	2		ITNA	73ABE 01
32.2	0.2		ITNA	78NAD 02
32.2	0.2		ITNA	75NAD 02
Th-228 (pCi/g)				
2.23	0.05		NM	80CAS 01
2.23	0.05	D	NM	81CAS 01
Th-23 (pCi/g)				
3.74	0.17	D	NM	81CAS 01
3.74	0.17		NM	80CAS 01
Th-232 (pCi/g)				
2.45	0.08	D	NM	81CAS 01
2.45	0.08		NM	80CAS 01
Ti (ug/g)				
3000			XRF	76WEW 01
6000			UU	80HEN 01
6000	400		ITNA	78MAC 01
6100			OES	78SUG 01
6100	200		ITNA	78NAD 02
6100	200		ITNA	75NAD 02
6300	200		ICPES	84BOT 01
6420			ITNA	75KLE 01
6600	300		ICPES	85HAR 01
6800			AA	79SIL 01
6800	200		ICPES	84NAD 01
6800	1100		ITNA	76OND 01
6960		35	TCGS	78GLA 04
7000	100	35	IENA	80GLA 03
7000	300		ITNA	77ROW 03
7000	300		ITNA	76STE 05
7000	300	D	NAA	79STE 01

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference
Ti (ug/g) cont.				
7000	700		ITNA	76WEW 01
7070	180		ICPES	81CHU 01
7100	100		ICPES	80NAD 01
7150	1200		ITNA	76RAG 01
7200	200	35	NAA	81GLA 03
7200	200		TCGS	79FAI 01
7200	200	D	TCGS	80AND 01
7200	1400		OES	76WEW 01
7210	95		TCGS	79AND 01
7230	400		PAA	74CHA 01
7250	360	D	PAA	77CHA 01
7250	360		PAA	76CHA 01
7300			XRF	78CAM 02
7300	150		14NAA	81WIL 01
7300	280		ITNA	77CHA 01
7300	280	D	ITNA	78RYA 01
7300	400		PAA	75OND 01
7330			ICPES	80FLO 01
7360	344		EXRF	78PEL 01
7400			ITNA	78WEA 01
7400	300		ITNA	75OND 01
7400	500		ITNA	78LAU 02
7400	800		AA	76OND 01
7500			EXRF	78WEG 01
7500			ICPES	80NAD 01
7500	500	35	ITNA	81GLA 02
7600	200		14NAA	81WIL 02
7600	800		ITNA	73ABE 01
7660	70		PAA	76KAT 02
7660	100		PAA	76KAT 03
7700	300		XRF	79SMI 01
8140			ICPES	84CLE 01
8200	1100		ITNA	81WAN 01
8600	1100		EXRF	77GIA 01
8700			AA	76WEW 01
8900	752		ITNA	73SHE 01
Tl (ug/g)				
2			UU	80HEN 01
3.5	0.5		PAA	80SEG 01
3.5	0.5	6	PAA	82SEG 01
3.64	0.34		PAA	74CHA 01
3.7	0.4		PAA	76CHA 01
3.7	0.4	D	PAA	77CHA 01
3.8	0.27	B	SSMS	80KOP 01
3.8	0.5	6	PAA	82SEG 01
5			AA	76WEW 01
5.3			POT	82CHR 01
18	6		14NAA	81WIL 01
18	6		14NAA	81WIL 02

Conc	Uncer	Com	Method	Reference
Tm (ug/g)				
0.45			SSMS	83WEI 02
1.3			ITNA	75MIL 01
1.3	0.3		SSMS	78SUG 02
1.36	0.02		RTNA	84ODD 01
1.43	0.04		ITNA	84ODD 01
U (ug/g)				
8.4	0.56		ITNA	73SHE 01
8.6	1	35	FLUOR	78GLA 01
9	6		EXRF	77GIA 01
10.5	1		ITNA	76RAG 01
10.6			ITNA	81WAN 01
10.6	0.6	35	IENA	78GLA 01
11	0.4	6	PAA	82SEG 01
11.1	1.7		ITNA	76OND 01
11.3	0.3		ITNA	75NAD 02
11.3	0.3		ITNA	78NAD 02
11.3	0.3	35	DNA	78GLA 01
11.5	0.5	35	IENA	80GLA 03
11.5	0.5	35	DNA	81GLA 03
11.7			DNA	75MIL 01
11.7	2		IDMS	78CAR 02
11.8			IDMS	75KLE 01
11.9	0.4	6	PAA	82SEG 01
11.9	0.6		PAA	80SEG 01
12			ITNA	78WEA 01
12	0.5		GAMMA	75OND 01
12	0.5		GAMMA	73ABE 01
12	0.5	D	NAA	74OND 01
12.1	0.8	13	PAA	81SEG 01
12.1	2	35	RTNA	75GLA 01
12.2	0.5	D	NAA	79STE 01
12.2	0.6		IENA	77ROW 04
12.2	1	13	PAA	81SEG 01
12.4	0.6		IENA	77ROW 03
12.7	0.5	D	NAA	79STE 01
12.7	0.5		IENA	76STE 05
12.8			ITNA	80EDD 01
13			SSMS	83WEI 02
13.5	1.2		ITNA	76STE 05
13.8			ITNA	75MIL 01
15			UU	80HEN 01
U-234 (pCi/g)				
4.07	0.12	D	NM	81CAS 01
4.07	0.12		NM	80CAS 01

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference
U-235 (pCi/g)				
0.179	0.012		NM	80CAS 01
0.179	0.012	D	NM	81CAS 01
U-238 (pCi/g)				
4.01	0.04	D	NM	81CAS 01
4.01	0.04		NM	80CAS 01
V (ug/g)				
151		6	SSMS	78GUI 01
174	55		XRF	79SMI 01
182			XRF	78CAM 02
190	50		TCGS	79FAI 01
190	50	D	TCGS	80AND 01
196	10		ITNA	78MAC 01
200			UU	80HEN 01
200	34		EXRF	78PEL 01
201	6		FAA	76OWE 01
204	15		ITNA	76BLO 01
208	12		PAA	74CHA 01
210			OES	78SUG 01
210			SSMS	83WEI 02
210	12	D	PAA	77CHA 01
210	12		PAA	76CHA 01
214	12		ICPES	84NAD 01
216			AA	78GUI 01
216			EXRF	78WEG 01
219			ICPES	80NAD 01
220	15	D	ITNA	78RYA 01
220	15		ITNA	73ABE 01
220	15		ITNA	77CHA 01
220	20	35	ITNA	81GLA 03
221			ITNA	78WEA 01
222	3		ICPES	84BOT 01
223	9.9		ITNA	75NAD 02
223	10		ITNA	78NAD 02
224	6.7		ICPES	81CHU 01
225	9		ICPES	85HAR 01
225	20		ITNA	76WEW 01
226			FAA	78GUI 01
230	10		ITNA	78LAU 02
230	10	35	ITNA	81GLA 02
230	10.6		ITNA	73SHE 01
230	12		OES	76WEW 01
230	30	35	IENA	80GLA 03
233			ICPES	80FLO 01
234	34		ITNA	81WAN 01
235	13	D	NAA	74OND 01
235	15		ITNA	75OND 01
236			ICPES	84CLE 01
V (ug/g) cont.				
237	9		ITNA	77MAE 01
237	20	D	NAA	79STE 01
237	20		ITNA	76STE 05
237	20		ITNA	77ROW 03
240			ITNA	75KLE 01
270	60		ITNA	76OND 01
271		6	SSMS	78GUI 01
290	80		ITNA	76RAG 01
295	156		EXRF	77GIA 01
410			AA	76WEW 01
W (ug/g)				
3.8	0.7		ITNA	81WAN 01
3.9	0.4	D	NAA	79STE 01
3.9	0.4		IENA	77ROW 04
4	0.4		IENA	77ROW 03
4.2	0.4		IENA	76STE 05
4.5	1	D	ITNA	78RYA 01
4.5	1		ITNA	77CHA 01
4.6			ITNA	78WEA 01
4.6			SSMS	83WEI 02
4.6	1.6		ITNA	75OND 01
4.8	1.5		ITNA	76OND 01
4.9	0.7	35	RENA	81GLA 03
5			UU	80HEN 01
5	1	35	IENA	80GLA 03
5.2	0.3	35	RTNA	78GLA 02
5.5	1.5		ITNA	76RAG 01
5.8	0.3	35	NAA	81GLA 04
6	1		ITNA	78MAC 01
12.7	1.1		ITNA	73SHE 01
Y (ug/g)				
30			UU	80HEN 01
44	4.2		OES	76WEW 01
56			SSMS	83WEI 02
60	5		EXRF	77GIA 01
60	8		PAA	77CHA 01
62	4		ICPES	85HAR 01
62	10		PAA	75OND 01
65			ICPES	80FLO 01
66			XRF	78CAM 02
66	2		PAA	76KAT 03
67	1		PAA	76KAT 02
68	1		XRF	79SMI 01
68	16		SSMS	78SUG 02
150	7		14NAA	81WIL 01
150	15		14NAA	81WIL 02

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference
Yb (ug/g)				
4.7	0.4		ITNA	78MAC 01
4.8	0.6		ITNA	76WEW 01
5.5	0.3		ITNA	78LAU 02
5.5	1.4		ITNA	78NAD 02
5.53	0.14		ITNA	75NAD 02
5.7	0.56		OES	76WEW 01
5.7	0.6		ITNA	76OND 01
5.9	0.3		ITNA	76RAG 01
5.9	0.3		IENA	77ROW 04
5.9	0.4		ITNA	84GLA 11
6.1	0.18		ICPES	81CHU 01
6.2	0.2	5	ITNA	77ROW 04
6.2	3.4		ITNA	73SHE 01
6.6	0.4	D	ITNA	77ROW 04
6.6	0.4	D	NAA	79STE 01
6.6	0.4		ITNA	77ROW 03
6.77	0.06		RTNA	84ODD 01
6.8			ITNA	75MIL 01
6.8	0.1		ITNA	84ODD 01
7			ICPES	80FLO 01
7	3		ITNA	75OND 01
7.2	2.1	D	ITNA	78RYA 01
7.2	2.1		ITNA	77CHA 01
8			SSMS	83WEI 02
8	0.5	35	ITNA	81GLA 03
8.4	0.6		ITNA	81WAN 01
8.9	0.9		ITNA	73ABE 01
9	1.4		SSMS	78SUG 02
Zn (ug/g)				
180.7	4		AA	74GAL 01
195	23		RTNA	74ORV 01
197	7		ICPES	84NAD 01
198			AA	78GUI 01
199	7		ICPES	84BOT 01
200			UU	80HEN 01
200			EXRF	78WEG 01
200	8		IENA	77ROW 04
200	10	9	ITNA	78LAU 02
200	10		EXRF	78PEL 01
200	20		ITNA	77CHA 01
200	20		ITNA	78LAU 02
200	20	D	ITNA	78RYA 01
200.5	4		RTNA	74GAL 01
201			AE+AF	77FEL 01
201	6	D	ITNA	77ROW 04
201	6	D	NAA	79STE 01
201	6		ITNA	77ROW 03
201	8		AA	76OND 01
202			XRF	78CAM 02
204	12	35	FAA	81GLA 03
204	13	5	IENA	80GLA 03
205	10	6	PAA	82SEG 01
205	20		PAA	80SEG 01
206			ICPES	84CLE 01
206	7.3		ITNA	81WAN 01
207			ITNA	78WEA 01
208			XRF	75KLE 01
208	9.5		AA	80STO 02
208.1	24		ITNA	74GAL 01
208.2	3.6		AA	77MIT 01
210			SSMS	83WEI 02
210			OES	78SUG 01
210			ICPES	80NAD 01
210	36		OES	76WEW 01
211			ICPES	80EPS 03
212			ICPES	80FLO 01
212	7		XRF	79SMI 01
212	14		ITNA	75NAD 02
212	14		ITNA	78NAD 02
212	20		FAA	76OWE 01
213			ICPES	84SOB 01
213.5	1		XRF	74GAL 01
214			AA	78GEL 01
214	2		AA	75EPS 01
214	2		AF	75EPS 01
214	16		PAA	74CHA 01
215	20		PAA	76CHA 01
215	20	D	PAA	77CHA 01
215	20		NAA	77JER 01
216			FAA	80WAL 01
216	2.4		AA	74RAI 01
216	14		EXRF	77GIA 01
216	25	D	NAA	74OND 01
216	25		PAA	75OND 01
218	33		AA	82HAR 01
219	4		ICPES	79EPS 01
220	5		ITNA	76OND 01
220	10	6	PAA	82SEG 01
220	130		ITNA	76BLO 01
221			AA	79SIL 01
221	16	5	IENA	80GLA 03
221	16	35	NAA	81GLA 04
228	6.9		ICPES	81CHU 01
230	40		ITNA	76RAG 01
232	9		ICPES	85HAR 01
234			AA	78WEG 01
250			AA	76WEW 01

TABLE 1633-2: INDIVIDUAL DATA FOR NBS SRM 1633 (cont.)

Conc	Uncer	Com	Method	Reference
Zn (ug/g) cont.				
270		6	SSMS	78GUI 01
270	30		ITNA	78MAC 01
283		6	SSMS	78GUI 01
308	75		ITNA	76WEW 01
700	220		ITNA	73SHE 01
Zr (ug/g)				
160	34		OES	76WEW 01
182	76		ITNA	76RAG 01
200			UU	80HEN 01
223	6.7		ICPES	81CHU 01
286	8	35	IENA	81GLA 04
288			ICPES	80FLO 01
290	7		EXRF	77GIA 01
290	20	5	IENA	80GLA 03
298	6		PAA	76KAT 02
298	10		PAA	76KAT 03
300	20	D	PAA	77CHA 01
300	20		PAA	76CHA 01
301	20		PAA	75OND 01
301	22		PAA	74CHA 01
305			XRF	78CAM 02
310	20		ITNA	77CHA 01
310	20	D	ITNA	78RYA 01
310	20	9	ITNA	78LAU 02
310	70		IENA	77ROW 03
310	70	D	IENA	77ROW 04
310	70	D	NAA	79STE 01
311	8		XRF	79SMI 01
340	50	5	IENA	80GLA 03
380	20		14NAA	81WIL 02
400			SSMS	83WEI 02
410			ITNA	77ROW 04
410	20		14NAA	81WIL 01
500			ITNA	75MIL 01
640	140		ITNA	73SHE 01

TABLE 1633A-1: COMPILED DATA FOR NBS SRM 1633A TRACE ELEMENTS IN COAL FLY ASH (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		XRF		OTHER METHODS	
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD (n)	Method
Ag	ng/g	---	< 300		---	---	---		< 300		---		---		---	
Al	%	14.3 ± 1.0	14.4 ± 0.7	(27)	14.4	13 - 16.5	14.5	(1)	14.1 ± 0.3	(9)	14.3 ± 0.6	(7)	15.7 ± 1.2	(7)	15	(1) CPAA
Al	%	---	---		---	---	---		---		---		---		13.8	(1) ICPMS
Al	%	---	---		---	---	---		---		---		---		14.15	(2) TCGS
As	ug/g	145 ± 15	146 ± 4	(26)	145	138.4 - 153	144 ± 6	(8)	146 ± 2	(11)	147 ± 9	(3)	149 ± 4	(3)	141	(1) AE-AF
As	ug/g	---	---		---	---	---		---		---		---		148	(1) ICPMS
As	ug/g	---	---		---	---	---		---		---		---		138	(1) POL
B	ug/g	---	40.3 ± 2.1	(7)	39.2	37.9 - 44	---		---		39	(1)	---		44	(1) OES
B	ug/g	---	---		---	---	---		---		---		---		39.8 ± 1.6	(5) TCGS
Ba	ug/g	1500	1420 ± 100	(23)	1440	1210 - 1600	---		1390 ± 120	(17)	1490 ± 80	(5)	1400	(2)	---	
Be	ug/g	12	12.8 ± 0.6	(11)	13	12 - 13.6	13.0	(2)	---		12.8 ± 0.6	(7)	---		12	(1) OES
Be	ug/g	---	---		---	---	---		---		---		---		13	(1) ICPMS
Bi	ug/g	---	1.26	(2)	---	1.11 - 1.42	1.11	(1)	---		---		---		1.42	(1) AF
Br	ug/g	---	2.3	(2)	---	2.2 - 2.40	---		2.3	(2)	---		---		---	
Ca	%	1.11 ± 0.01	1.14 ± 0.06	(27)	1.12	1.05 - 1.27	1.12	(2)	1.12 ± 0.05	(10)	1.10 ± 0.07	(7)	1.18 ± 0.07	(7)	1.24	(2) TCGS
Ca	%	---	---		---	---	---		---		---		---		1.1	(1) ICPMS
Cd	ug/g	1.00 ± 0.15	1.12 ± 0.17	(9)	1.07	0.901 - 1.36	0.90	(1)	---		1.2	(1)	---		0.95	(1) IDMS
Cd	ug/g	---	---		---	---	---		---		---		---		1.32 ± 0.04	(3) AF
Cd	ug/g	---	---		---	---	---		---		---		---		1.04	(2) TCGS
Cd	ug/g	---	---		---	---	---		---		---		---		0.96	(1) ICPMS
Ce	ug/g	180	175 ± 7	(13)	174	163 - 186	---		175 ± 7	(13)	---		---		---	
Cl	ug/g	---	< 69		---	---	---		< 69		---		---		---	
Co	ug/g	46	43 ± 3	(21)	44	37 - 47	45.6	(2)	44 ± 2	(13)	35	(2)	38	(1)	44.9 ± 1.0	(3) COLOR
Cr	ug/g	196 ± 6	194 ± 7	(21)	192	185 - 210	196 ± 6	(3)	192 ± 4	(11)	193 ± 10	(5)	172	(2)	210	(1) ICPMS
Cs	ug/g	11	10.5 ± 0.7	(16)	10.5	9.3 - 11.8	---		10.5 ± 0.7	(16)	---		---		---	
Cu	ug/g	118 ± 3	120 ± 4	(11)	120	115 - 128	106	(2)	124	(1)	118 ± 2	(5)	115 ± 17	(3)	123	(1) ICPMS
Cu	ug/g	---	---		---	---	---		---		---		---		116.1	(1) IDMS
Dy	ug/g	---	15.6 ± 1.2	(8)	15	14.3 - 17.4	---		15.6 ± 1.2	(8)	---		---		---	
Eu	ug/g	4	3.7 ± 0.2	(13)	3.7	3.19 - 4.06	---		3.7 ± 0.2	(13)	---		---		---	
F	ug/g	---	94 ± 20	(4)	87	70 - 114	---		---		---		---		100	(2) CPAA
F	ug/g	---	---		---	---	---		---		---		---		107	(1) SSMS
Fe	%	9.40 ± 0.10	9.37 ± 0.23	(30)	9.38	8.83 - 9.70	9.08 ± 0.38	(3)	9.48 ± 0.15	(14)	9.35 ± 0.11	(6)	9.0 ± 0.4	(5)	9.16	(1) ICPMS
Fe	%	---	---		---	---	---		---		---		---		9.61	(2) TCGS
Ga	ug/g	58	56 ± 3	(9)	55.7	51 - 62.5	58	(1)	54 ± 5	(6)	---		57 ± 5	(3)	---	
Gd	ug/g	---	19 ± 4	(6)	17	15.3 - 25	---		25	(1)	---		---		18 ± 3	(5) TCGS
Ge	ug/g	---	33.9 ± 0.2	(5)	34	33.5 - 34	---		---		33.8	(1)	34	(3)	33.5	(1) COLOR

TABLE 1633A-1: COMPILED DATA FOR NBS SRM 1633A TRACE ELEMENTS IN COAL FLY ASH (cont.)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		XRF		OTHER METHODS	
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD (n)	Method
H2O-	%	---	0.35	(1)	---	---	---		---		---		---		0.35 (1)	FD
Hf	ug/g	8	7.4 ± 0.3	(13)	7.31	6.6 - 7.80	---		7.4 ± 0.3	(13)	---		---		---	
Hg	ng/g	160 ± 10	164 ± 24	(3)	151	150 - 192	150	(2)	---		---		---		192 (1)	ICPMS
Ho	ug/g	---	2.9	(1)	---	---	---		2.9	(1)	---		---		---	
I	ug/g	---	< 4.5		---	---	---		< 4.5		---		---		---	
In	ng/g	---	158 ± 5	(4)	160	151 - 160	160	(1)	157 ± 5	(3)	---		---		---	
K	%	1.88 ± 0.06	1.88 ± 0.05	(23)	1.86	1.77 - 1.99	1.91 ± 0.06	(3)	1.85 ± 0.04	(9)	1.89 ± 0.14	(5)	1.83 ± 0.08	(5)	1.96 (2)	TCGS
K	%	---	---		---	---	---		---		---		---		1.85 (1)	ICPMS
K-40	pCi/g	---	13.9	(1)	---	---	---		---		---		---		13.9 (1)	GAMMA
La	ug/g	---	84 ± 8	(15)	83.8	66 - 100	---		84 ± 8	(14)	93	(1)	---		---	
Li	ug/g	---	165 ± 50	(4)	151	100 - 221	---		---		169	(2)	---		100 (1)	OES
Li	ug/g	---	---		---	---	---		---		---		---		221 (1)	CPAA
Lu	ug/g	---	1.12 ± 0.18	(8)	1.04	0.93 - 1.44	---		1.12 ± 0.18	(8)	---		---		---	
Mg	ug/g	4550 ± 100	4570 ± 450	(14)	4600	3800 - 5700	4395	(2)	5500 ± 900	(3)	4680 ± 110	(6)	3800	(1)	4440 (1)	ICPMS
Mg	ug/g	---	---		---	---	---		---		---		---		4800 (1)	CPAA
Mn	ug/g	179 ± 8	188 ± 15	(21)	188	167 - 230	167	(1)	191 ± 25	(11)	191 ± 20	(6)	198	(2)	190 (1)	TCGS
Mn	ug/g	---	---		---	---	---		---		---		---		206 (1)	ICPMS
Mo	ug/g	29	30 ± 3	(8)	29.2	26 - 36	---		31 ± 4	(4)	32	(1)	28	(2)	29.2 (1)	ICPMS
Na	ug/g	1700 ± 100	1730 ± 110	(22)	1750	1484 - 2020	1580	(2)	1750 ± 60	(12)	1700 ± 130	(5)	2200	(1)	1670 (1)	ICPMS
Na	ug/g	---	---		---	---	---		---		---		---		1769 (1)	CPAA
Na	ug/g	---	---		---	---	---		---		---		---		2100 (1)	TCGS
Nb	ug/g	---	28	(2)	---	24 - 31.5	---		---		---		28	(2)	---	
Nd	ug/g	---	74 ± 10	(5)	77.3	65.6 - 89	---		79 ± 9	(3)	---		---		65.8 (2)	TCGS
Ni	ug/g	127 ± 4	124 ± 13	(16)	127	97 - 140	134	(1)	120 ± 18	(4)	130 ± 9	(4)	111 ± 17	(5)	124 (1)	VOLT
Ni	ug/g	---	---		---	---	---		---		---		---		132 (1)	ICPMS
Ni	ug/g	---	---		---	---	---		---		---		---		133 (1)	COLOR
O	%	---	47.66	(1)	---	---	---		---		---		---		47.66 (1)	14NAA
P	ug/g	---	1690 ± 240	(7)	1744	1320 - 2000	2000	(1)	---		1570 ± 240	(4)	1700	(1)	1840 (1)	ICPMS
Pb	ug/g	72.4 ± 0.4	72 ± 4	(13)	72	64 - 75.9	72.4	(1)	---		68 ± 8	(4)	73 ± 4	(6)	72 (1)	POT
Pb	ug/g	---	---		---	---	---		---		---		---		71.8 (1)	IDMS
Pb	ug/g	---	---		---	---	---		---		---		---		70.4 (1)	ICPMS
Pb-210	pCi/g	---	3.65	(2)	---	3.4 - 3.9	---		---		---		---		3.9 (1)	NM
Pb-210	pCi/g	---	---		---	---	---		---		---		---		3.4 (1)	GAMMA
Po-210	pCi/g	---	3.75	(1)	---	---	---		---		---		---		3.75 (1)	RAS
Pr	ug/g	---	18.4	(2)	---	17.9 - 18.9	---		18.4	(2)	---		---		---	
Ra-226	pCi/g	---	3.2	(1)	---	---	---		---		---		---		3.2 (1)	GAMMA
Rb	ug/g	131 ± 2	138 ± 11	(13)	136	121 - 163	---		142 ± 15	(9)	---		136 ± 10	(5)	---	

TABLE 1633A-1: COMPILED DATA FOR NBS SRM 1633A TRACE ELEMENTS IN COAL FLY ASH (cont.)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		XRF		OTHER METHODS	
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD (n)	Method
S	ug/g	1800	1900 ± 700	(4)	1350	1200 - 2700	---		---		1200	(1)	2300	(1)	1350	(1) ICPMS
S	ug/g	---	---		---	---	---		---		---		---		2700	(1) TCGS
S-32/34 ratio		---	22.641	(1)	---	---	---		---		---		---		22.641	(1) IDMS
S-33/34 ratio		---	0.1781	(1)	---	---	---		---		---		---		0.1781	(1) IDMS
Sb	ug/g	6.8 ± 0.4	6.9 ± 0.5	(14)	6.88	6.3 - 7.8	7.3 ± 1.4	(3)	7.0 ± 0.5	(11)	---		---		6.88	(1) ICPMS
Sb	ug/g	---	---		---	---	---		---		---		---		4.8	(1) AF
Sc	ug/g	40	39 ± 3	(14)	39	34 - 43	---		39.5 ± 1.9	(11)	40.3	(1)	34	(1)	---	
Se	ug/g	10.3 ± 0.6	10.0 ± 1.7	(18)	10	6.2 - 13	10.4 ± 0.5	(3)	10.5 ± 1.5	(8)	10.5	(2)	7.8 ± 1.2	(4)	6.2	(1) AF
Se	ug/g	---	---		---	---	---		---		---		---		12	(1) ICPMS
Si	%	22.8 ± 0.8	23.0 ± 0.9	(15)	23	21 - 24.2	24.05	(2)	23.9	(1)	23.5 ± 0.4	(4)	22.4 ± 1.0	(6)	21.6	(2) TCGS
Si	%	---	---		---	---	---		---		---		---		22.16	(1) ICPMS
Sm	ug/g	---	17.0 ± 1.5	(16)	16.7	14.5 - 20	---		17.5 ± 1.9	(13)	---		---		16.3 ± 0.4	(4) TCGS
Sn	ug/g	---	10 ± 6	(5)	6.36	3.96 - 18.5	6.33	(2)	---		18.5	(1)	---		14.8	(1) AF
Sn	ug/g	---	---		---	---	---		---		---		---		3.96	(1) ICPMS
Sr	ug/g	830 ± 30	810 ± 40	(20)	815	740 - 890	---		805 ± 37	(12)	790 ± 50	(4)	840 ± 60	(5)	---	
Ta	ug/g	---	2.0 ± 0.2	(12)	1.94	1.71 - 2.30	---		2.0 ± 0.2	(12)	---		---		---	
Tb	ug/g	---	2.5 ± 0.3	(9)	2.5	2.1 - 2.9	---		2.5 ± 0.3	(9)	---		---		---	
Te	ug/g	---	< 3.5		---	---	---		< 3.5		---		---		---	
Th	ug/g	24.7 ± 0.3	25.1 ± 1.4	(18)	24.8	22.4 - 28	---		25.0 ± 0.6	(14)	---		25 ± 6	(3)	23.2	(1) ICPMS
Th-232	pCi/g	---	2.4	(1)	---	---	---		---		---		---		2.4	(1) GAMMA
Ti	ug/g	8000	8230 ± 390	(25)	8100	7400 - 9000	9000	(1)	8200 ± 400	(11)	7900 ± 600	(6)	7700 ± 800	(7)	8500	(2) TCGS
Ti	ug/g	---	---		---	---	---		---		---		---		8000	(1) ICPMS
Tl	ug/g	5.7 ± 0.2	5.3 ± 0.8	(3)	5.7	4.4 - 5.7	---		5.7	(1)	---		4.4	(1)	5.7	(1) ICPMS
Tm	ug/g	---	2.4	(1)	---	---	---		2.4	(1)	---		---		---	
U	ug/g	10.2 ± 0.1	10.3 ± 0.3	(21)	10.3	9.66 - 11	---		10.2 ± 0.3	(18)	---		11	(1)	10.2	(1) FLUOR
U	ug/g	---	---		---	---	---		---		---		---		10.2	(1) ICPMS
U-238	pCi/g	---	3.6	(1)	---	---	---		---		---		---		3.6	(1) GAMMA
V	ug/g	297 ± 6	294 ± 18	(18)	290	271 - 344	---		289 ± 8	(9)	290 ± 13	(6)	243	(2)	324	(1) ICPMS
V	ug/g	---	---		---	---	---		---		---		---		360	(1) TCGS
W	ug/g	---	5.7 ± 0.7	(7)	5.4	4.71 - 6.9	---		5.7 ± 0.7	(7)	---		---		---	
Y	ug/g	---	82 ± 6	(4)	82	74 - 89	---		---		89	(1)	85 ± 12	(4)	---	
Yb	ug/g	---	7.4 ± 0.7	(8)	7.5	6.02 - 8.3	---		7.4 ± 0.7	(8)	---		---		---	
Zn	ug/g	220 ± 10	226 ± 22	(22)	226	189 - 263	228	(2)	240 ± 17	(5)	226 ± 20	(6)	231 ± 23	(5)	192 ± 4	(3) AF
Zn	ug/g	---	---		---	---	---		---		---		---		230	(1) ICPMS
Zr	ug/g	---	330 ± 80	(6)	300	220 - 410	---		370 ± 50	(4)	---		241	(2)	---	

TABLE 1633A-2: INDIVIDUAL DATA FOR NBS SRM 1633A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ag (ug/g)				
< 0.3			ITNA	85GAU 04
< 0.6		L	IENA	80GLA 03
< 1.1		L	ITNA	82SUZ 02
Al (%)				
13	0.41		ICPES	84NAD 01
13.8	0.2		ICPMS	86SCI 02
13.8	0.32		ITNA	83OBR 01
13.93	0.32		IENA	85GLA 02
14	0.2		TCGS	79FAI 01
14	0.2	D	TCGS	80AND 01
14	0.3		ITNA	85VOG 01
14.1	0.2		ICPES	84BOT 01
14.1	0.8		ITNA	85SUN 01
14.2	0.3		ITNA	80GAR 01
14.2	0.3	35	ITNA	81GLA 02
14.2	0.4	35	ITNA	81GLA 04
14.2	0.5	11	ICPES	85SAT 01
14.3	0.1		TCGS	85VOG 01
14.4	0.1		ICPES	85HAR 01
14.4	0.2	11	ICPES	85SAT 01
14.5	0.12		AA	82NAD 02
14.7	0.7		ITNA	82SUZ 02
14.73	0.3	16	EXRF	82PEL 01
14.76	0.3	16	EXRF	82PEL 01
14.81	0.2		ICPES	82NAD 02
14.9707	0.0529		ICPES	85PEA 01
15			CPAA	83BIR 01
15	0.43		CPXRF	80KIR 01
15.3	1.1		CPXRF	84AHL 01
15.4	0.2	16	EXRF	82PEL 01
16.5	1.5		ITNA	85FIL 01
17.4		6	EXRF	84JEN 01
17.5		6	EXRF	84JEN 01
As (ug/g)				
52.3			ICPES	85NAR 02
66			AF	85NAR 02
96	13		ICPES	84NAD 01
97	18		CPXRF	80KIR 01
135		11	HAA	82CRO 03
135	5		HAA	85YAM 01
138.4	8.8		POL	83ELK 01
140	1		ICPES	84LIV 01
141	8		AE-AF	82MAT 01
142			ITNA	81SLO 01
143			RTNA	81SLO 01
143	8		FAA	84SIL 01
144	12	13	ICPES	84BOT 01

Conc	Uncer	Com	Method	Reference
As (ug/g) cont.				
145		11	FAA	83XIA 01
145			HAA	84YAM 01
145	6		ITNA	82SUZ 02
145	8		CPXRF	84AHL 01
145	8	35	VV	81GLA 04
145	11		IENA	82GLA 02
145	15		ITNA	84SIL 01
145.3	8.1		ITNA	83OBR 01
146	2		ITNA	85VOG 01
147			HAA	84TER 04
147	15		ITNA	85FIL 01
148	3	35	IENA	80GLA 03
148	5		ICPMS	86SCI 02
149	3		ITNA	85SUN 01
150		11	HAA	82CRO 03
151		6	EXRF	84JEN 01
152		6	EXRF	84JEN 01
153		11	FAA	83XIA 01
157	11	13	ICPES	84BOT 01
B (ug/g)				
37.9	1.7		TCGS	85VOG 01
39	1		ICPES	82OWE 01
39	3	35	TCGS	81GLA 04
39.2	0.7	D	TCGS	80AND 01
39.2	0.7		TCGS	79FAI 01
41			TCGS	84HIG 01
42	4		TCGS	84GLA 01
44			OES	83MIL 01
Ba (ug/g)				
1060			ITNA	82GLA 02
1100	100	9	ITNA	82SUZ 02
1210	50	9	ITNA	82SUZ 02
1240	200	5	IENA	80GLA 03
1300	90		ITNA	84SUZ 02
1300	100		CPXRF	84AHL 01
1333	100	17	ITNA	84KYL 01
1339	177		ITNA	85SUN 01
1400	20	5	IENA	80GLA 03
1400	100		ICPES	84NAD 01
1400	360		ITNA	85FIL 01
1430	25	11	ICPES	85SAT 01
1440	36		ITNA	83OBR 01
1450	110	35	NAA	81GLA 04
1471	70	17	ITNA	84KYL 01
1480	30		ICPES	85HAR 01
1490	80		ITNA	84GLA 02
1500	90		ITNA	80GAR 01

TABLE 1633A-2: INDIVIDUAL DATA FOR NBS SRM 1633A (cont.)

Conc	Uncer	Com	Method	Reference
Ba (ug/g) cont.				
1500	100		ITNA	85VOG 01
1500	100		CPXRF	80KIR 01
1500	200	35	ITNA	81GLA 02
1520	20	5	IENA	80GLA 03
1540	30		ICPES	84BOT 01
1600			ICPES	82NAD 02
1760	300	5	IENA	80GLA 03
2350		6	EXRF	84JEN 01
2370		6	EXRF	84JEN 01
Be (ug/g)				
12			OES	83MIL 01
12.16		6	ICPES	85POU 01
12.2	0.3	11	ICPES	85SAT 01
12.36		6	ICPES	85POU 01
12.5	0.8		FAA	85POU 01
13	0.2		ICPES	84BOT 01
13	2		ICPMS	86SCI 02
13.3	0.5	11	ICPES	85SAT 01
13.4		6	ICPES	85POU 01
13.5	0.8	6	ICPES	85POU 01
13.6		D	AA	83TER 01
13.6			AA	82TER 02
Bi (ug/g)				
1.11		D	FAA	84TER 03
1.11			HAA	84TER 02
1.42			AF	85NAR 02
Br (ug/g)				
<	4.4		ITNA	84SUZ 02
<	10	L	IENA	80GLA 03
2.2	0.3		ITNA	82SUZ 02
2.4	0.1	5	IENA	80GLA 03
Ca (%)				
0.025	0.002		AA	82HAR 01
0.99	0.09		ICPES	84NAD 01
1.05	0.16	35	ITNA	81GLA 02
1.08	0.02		ICPES	84BOT 01
1.08	0.06		CPXRF	84AHL 01
1.09	0.01		AA	82NAD 02
1.09	0.02		ICPES	85HAR 01
1.1	0.08		ICPMS	86SCI 02
1.1	0.1	35	ITNA	81GLA 04
1.1	0.3	35	IENA	80GLA 03
1.11	0.03		ICPES	82NAD 02

Conc	Uncer	Com	Method	Reference
Ca (%) cont.				
1.11	0.076		ITNA	83OBR 01
1.12	0.01	11	ICPES	85SAT 01
1.12	0.01	11	ICPES	85SAT 01
1.12	0.07		ITNA	85VOG 01
1.12	0.08		ITNA	80GAR 01
1.13	0.02	16	EXRF	82PEL 01
1.13	0.12		ITNA	85SUN 01
1.14	0.02	16	EXRF	82PEL 01
1.14	0.02	16	EXRF	82PEL 01
1.14	0.04		AA	82GLA 02
1.16	0.21		ITNA	82SUZ 02
1.2	0.08		CPXRF	80KIR 01
1.2	0.2		TCGS	85VOG 01
1.2155			ICPES	85PEA 01
1.23	0.16		ITNA	85FIL 01
1.27		6	EXRF	84JEN 01
1.27		6	EXRF	84JEN 01
1.29			ITNA	85GAU 04
1.29	0.11	D	TCGS	80AND 01
1.29	0.11		TCGS	79FAI 01
Cd (ug/g)				
0.901			AA	84TER 01
0.95	0.05		IDMS	84BRO 03
0.96	0.06		ICPMS	86SCI 02
1.01	0.13		TCGS	85VOG 01
1.07	0.05	D	TCGS	80AND 01
1.07	0.05		TCGS	79FAI 01
1.2	0.6	13	ICPES	84BOT 01
1.28		6	AF	84NAR 02
1.31			AF	85NAR 02
1.36		6	AF	84NAR 02
3.1			ICPES	85NAR 02
7.4	3.3	13	ICPES	84BOT 01
Ce (ug/g)				
163	6		ITNA	82GLA 02
167	8	12	ITNA	82SUZ 02
170	6		ITNA	84SUZ 02
170	6	35	ITNA	81GLA 02
172.1	1	17	ITNA	84KYL 01
173.1	3.2	17	ITNA	84KYL 01
174	5	12	ITNA	82SUZ 02
175	4		ITNA	85SUN 01
180	5	35	NAA	81GLA 04
180	20		ITNA	85FIL 01
183	19		ITNA	80GAR 01
185	5		ITNA	85VOG 01
186	4	35	IENA	80GLA 03
230	45		CPXRF	80KIR 01

TABLE 1633A-2: INDIVIDUAL DATA FOR NBS SRM 1633A (cont.)

Conc	Uncer	Com	Method	Reference
Cl (ug/g)				
<	69	L	ITNA	82SUZ 02
Co (ug/g)				
33	2		ICPES	85HAR 01
37	1		ICPES	84BOT 01
37	3	35	IENA	80GLA 03
38	13		CPXRF	80KIR 01
39	2		ITNA	85FIL 01
40			ITNA	82GLA 02
42.8	0.8	17	ITNA	84KYL 01
43.3	1	17	ITNA	84KYL 01
43.5	1.6		ITNA	84GLA 11
43.9	0.55		COLOR	85KAT 01
44	1	35	ITNA	81GLA 02
44	1		ITNA	82SUZ 02
44.2	1.55		AA	85KAT 01
44.8	0.8		ITNA	84GLA 02
44.8	1	12	COLOR	83KAT 02
45	2		ITNA	84SUZ 02
45.9	0.7		ITNA	85VOG 01
46	1.36	12	COLOR	83KAT 02
46	1.5		ITNA	85SUN 01
46.2	1.8		ITNA	80GAR 01
47	4	35	NAA	81GLA 04
47	11		AA	82HAR 01
Cr (ug/g)				
129	2		ICPES	84NAD 01
145	44		CPXRF	84AHL 01
185	7	12	ITNA	82SUZ 02
186	6		ICPES	85HAR 01
186	8	35	ITNA	81GLA 02
187	8		ICPES	84BOT 01
189	3	11	ICPES	85SAT 01
190	1.5	11	AA	84KAM 01
190	6		ITNA	85SUN 01
190	8		ITNA	85FIL 01
191	13		ITNA	82GLA 02
192			ICPES	81WAL 01
193	14		ITNA	84SUZ 02
194	6	12	ITNA	82SUZ 02
195	7		ITNA	84GLA 02
196	8	11	AA	84KAM 01
197	13		ITNA	80GAR 01
197	18	35	ITNA	81GLA 04
198	1		ITNA	85VOG 01
200	11		CPXRF	80KIR 01
202	16		AA	82HAR 01
210		11	ICPES	85SAT 01
210	8		ICPMS	86SCI 02
482		6	EXRF	84JEN 01
486		6	EXRF	84JEN 01

Conc	Uncer	Com	Method	Reference
Cs (ug/g)				
9.3	0.5		ITNA	82GLA 02
9.6	0.6	17	ITNA	84KYL 01
9.7	0.6	35	ITNA	81GLA 02
9.9	0.6		ITNA	84GLA 11
9.9	0.9		ITNA	84GLA 02
10.1	0.2	35	IENA	80GLA 03
10.2	0.2		ITNA	82SUZ 02
10.5	0.3	35	NAA	81GLA 04
10.6	1.1		ITNA	80GAR 01
10.7	0.6	17	ITNA	84KYL 01
10.8	0.3		ITNA	86GAU 01
11	1.1		ITNA	85FIL 01
11.1	1.2		ITNA	85GAU 04
11.2	0.5		ITNA	85VOG 01
11.3	0.5		ITNA	85SUN 01
11.8	3.2		ITNA	84SUZ 02
Cu (ug/g)				
96	7		CPXRF	84AHL 01
96.6	10.7		AA	84KAN 01
115	1	11	ICPES	85SAT 01
116	4		AA	82HAR 01
116	7		ICPES	84NAD 01
116.1	0.8		IDMS	84BRO 03
120		11	ICPES	85SAT 01
120	2		ICPES	85HAR 01
120	4		ICPES	84BOT 01
120	5.2		CPXRF	80KIR 01
123	4		ICPMS	86SCI 02
124	33		ITNA	84SUZ 02
128	4		WXRF	84KYL 01
186		6	EXRF	84JEN 01
188		6	EXRF	84JEN 01
Dy (ug/g)				
14.3	0.2	35	ITNA	81GLA 02
14.5		35	ITNA	81GLA 04
15	0.9		ITNA	85SUN 01
15	3.3		ITNA	83OBR 01
16.6	1.3		ITNA	80GAR 01
16.8	0.3		ITNA	82SUZ 02
17.4	0.5		ITNA	84SUZ 02

TABLE 1633A-2: INDIVIDUAL DATA FOR NBS SRM 1633A (cont.)

Conc	Uncer	Com	Method	Reference
Eu (ug/g)				
2	2	35	IENA	80GLA 03
2.98	0.33		ITNA	80GAR 01
3.19	0.08	35	ITNA	81GLA 02
3.6	0.1		ITNA	84GLA 02
3.62	0.04	17	ITNA	84KYL 01
3.64	0.25		ITNA	83OBR 01
3.7	0.2	35	ITNA	81GLA 04
3.7	0.2		ITNA	82GLA 02
3.7	0.3		ITNA	82SUZ 02
3.7	0.6		ITNA	85FIL 01
3.72	0.08	17	ITNA	84KYL 01
3.9	0.3		ITNA	84SUZ 02
4	0.2		ITNA	85VOG 01
4.06	0.14		ITNA	85SUN 01
F (ug/g)				
23	2		ISE	83BET 02
70			UU	85RIC 01
87			CPAA	83BIR 01
107			SSMS	85CLA 02
114	13		CPAA	85CLA 02
Fe (%)				
6.7	0.3		CPXRF	84AHL 01
8.4	0.1		ITNA	85FIL 01
8.54		6	EXRF	84JEN 01
8.6		6	EXRF	84JEN 01
8.83	0.43		ICPES	84NAD 01
8.84			AA	82GLA 02
8.88	0.07		AA	82NAD 02
9.16	0.01		ICPMS	86SCI 02
9.21	0.1		ICPES	82NAD 02
9.23	0.09	35	ITNA	81GLA 02
9.24	0.13	17	ITNA	84KYL 01
9.26	0.02	16	EXRF	82PEL 01
9.2967	0.2097		ICPES	85PEA 01
9.3	0.02	16	EXRF	82PEL 01
9.3	0.1		ICPES	85HAR 01
9.36	0.02	11	ICPES	85SAT 01
9.36	0.49	35	NAA	81GLA 04
9.38	0.07		ICPES	84BOT 01
9.4	0.1	5	IENA	80GLA 03
9.4	0.3	12	ITNA	82SUZ 02
9.43	0.17	17	ITNA	84KYL 01
9.48	0.02	16	EXRF	82PEL 01
9.49	0.1		ITNA	84GLA 02
9.5	0.15		ITNA	85VOG 01
9.5	0.3		ITNA	80GAR 01
9.5	0.3	12	ITNA	82SUZ 02

Conc	Uncer	Com	Method	Reference
Fe (%) cont.				
9.51	0.61		AA	82HAR 01
9.52	0.34		TCGS	85VOG 01
9.53	0.08	11	ICPES	85SAT 01
9.58	0.22		ITNA	85SUN 01
9.62	0.1		ITNA	85GAU 04
9.7	0.2	5	IENA	80GLA 03
9.7	0.2	D	TCGS	80AND 01
9.7	0.2		TCGS	79FAI 01
9.7	0.3		ITNA	84SUZ 02
Ga (ug/g)				
33		6	EXRF	84JEN 01
34		6	EXRF	84JEN 01
45	5		ITNA	85FIL 01
51	5		ITNA	82SUZ 02
54	4		CPXRF	84AHL 01
55	4.6		CPXRF	80KIR 01
55.7	4.5		ITNA	83OBR 01
56		35	IENA	81GLA 04
57.5			FAA	85XIA 01
59	1	35	IENA	80GLA 03
62.5	1		WXRF	84KYL 01
Gd (ug/g)				
15.3	0.2		TCGS	79FAI 01
16.3	0.8		TCGS	85VOG 01
17	2	4	TCGS	85GLA 05
18	2	4	TCGS	85GLA 05
23.5	0.3		TCGS	80AND 01
25	2		ITNA	84SUZ 02
Ge (ug/g)				
33.5	0.7		COLOR	84SHI 01
33.8	3.4		ICPES	84NAD 02
34		6	EXRF	84JEN 01
34		6	EXRF	84JEN 01
34	2		CPXRF	84AHL 01
H2O-T (%)				
0.35			FD	80KHA 02

TABLE 1633A-2: INDIVIDUAL DATA FOR NBS SRM 1633A (cont.)

Conc	Uncer	Com	Method	Reference
Hf (ug/g)				
6.3	0.7	9	ITNA	82SUZ 02
6.6			ITNA	82GLA 02
7	0.2	17	ITNA	84KYL 01
7	0.6		ITNA	85FIL 01
7.2	0.3	35	ITNA	81GLA 02
7.2	0.8	9	ITNA	82SUZ 02
7.31	0.37		ITNA	85SUN 01
7.4	0.4		ITNA	84GLA 02
7.5	0.4	17	ITNA	84KYL 01
7.6	0.2	35	NAA	81GLA 04
7.6	0.2		ITNA	85VOG 01
7.6	0.3		ITNA	84SUZ 02
7.78	0.85		ITNA	80GAR 01
7.8	0.2	35	IENA	80GLA 03
Hg (ng/g)				
150	10		CVAA	82GLA 02
151	12		CVAA	82DOO 01
192	8		ICPMS	86SCI 02
Ho (ug/g)				
2.9	0.4		ITNA	84SUZ 02
I (ug/g)				
<	4.5		ITNA	84SUZ 02
<	5	L	ITNA	82SUZ 02
In (ng/g)				
151	16		ITNA	82SUZ 02
160	10		FAA	85XIA 02
160	30		ITNA	83OBR 01
K (%)				
1.7	0.06		ICPES	84NAD 01
1.71	0.09		CPXRF	84AHL 01
1.77	0.23		ITNA	85FIL 01
1.8	0.07		CPXRF	80KIR 01
1.82			ITNA	84GLA 02
1.84	0.14		ITNA	80GAR 01
1.85	0.02		ICPMS	86SCI 02
1.85	0.02		AA	82HAR 01
1.85	0.05		ITNA	85SUN 01
1.86	0.06		ICPES	84BOT 01
1.86	0.089		ITNA	83OBR 01
1.86	0.12		ITNA	82SUZ 02
1.87	0.02	16	EXRF	82PEL 01

Conc	Uncer	Com	Method	Reference
K (%) cont.				
1.88	0.04		ICPES	82NAD 02
1.88	0.1	35	ITNA	81GLA 04
1.89	0.02	16	EXRF	82PEL 01
1.9	0.02	16	EXRF	82PEL 01
1.909	0.083		ICPES	85PEA 01
1.92	0.04		ITNA	85VOG 01
1.93	0.03		AA	82NAD 02
1.94	0.11		TCGS	85VOG 01
1.96	0.02		AA	82GLA 02
1.97	0.04		TCGS	79FAI 01
1.97	0.04	D	TCGS	80AND 01
1.99	0.03	35	IENA	80GLA 03
2.09	0.08		ICPES	85HAR 01
2.29		6	EXRF	84JEN 01
2.31		6	EXRF	84JEN 01
K-40 (pCi/g)				
13.9	0.4		GAMMA	84ROS 03
La (ug/g)				
62	2		ITNA	82SUZ 02
66	2		ITNA	84SUZ 02
79			ITNA	84GLA 02
79.4	1.3	17	ITNA	84KYL 01
79.9	0.4	17	ITNA	84KYL 01
81	1		ITNA	82GLA 02
83	4	35	ITNA	81GLA 04
83.8	1		ITNA	85SUN 01
84	2		ITNA	82GRA 01
84	6	35	IENA	80GLA 03
87.9	7		ITNA	83OBR 01
89	5		ITNA	85FIL 01
90.2	0.9		ITNA	85VOG 01
93	2		ICPES	85HAR 01
100	23		ITNA	80GAR 01
Li (ug/g)				
100			OES	83MIL 01
151	15		ICPES	84BOT 01
187	6		ICPES	84NAD 01
221			CPAA	83BIR 01

TABLE 1633A-2: INDIVIDUAL DATA FOR NBS SRM 1633A (cont.)

Conc	Uncer	Com	Method	Reference
Lu (ug/g)				
0.93	0.09		ITNA	80GAR 01
0.97	0.25		ITNA	82GLA 02
0.99	0.02	17	ITNA	84KYL 01
1.04	0.07		ITNA	85SUN 01
1.06	0.13		ITNA	84GLA 11
1.17	0.03	17	ITNA	84KYL 01
1.33	0.1		ITNA	84SUZ 02
1.44	0.12		ITNA	82SUZ 02
Mg (ug/g)				
1400	200		AA	82HAR 01
3800	700		CPXRF	80KIR 01
3900	200		ICPES	84NAD 01
4200			AA	82GLA 02
4440	40		ICPMS	86SCI 02
4500	500		ITNA	80GAR 01
4520	80		ICPES	84BOT 01
4590	30		AA	82NAD 02
4600	70		ICPES	82NAD 02
4660	50		ICPES	85HAR 01
4710	80	11	ICPES	85SAT 01
4760	200	11	ICPES	85SAT 01
4800			CPAA	83BIR 01
4824			ICPES	85PEA 01
5700			ITNA	85GAU 04
6200	500		IENA	85GLA 02
8000	1300		ITNA	82SUZ 02
Mn (ug/g)				
167	7		ITNA	85FIL 01
167	9		AA	82HAR 01
170	24		ITNA	82SUZ 02
173	5		ICPES	85HAR 01
180		11	ICPES	85SAT 01
181	9		ITNA	85SUN 01
182			ITNA	85GAU 04
182	3	35	ITNA	81GLA 02
184	7		ICPES	84NAD 01
185	11		ITNA	83OBR 01
188	1	11	ICPES	85SAT 01
189	2		ITNA	85VOG 01
189	5		ICPES	84BOT 01
190	15	D	TCGS	80AND 01
190	15		TCGS	79FAI 01
191	4		ITNA	80GAR 01
195	15		CPXRF	80KIR 01
200	56		CPXRF	84AHL 01
206	7		ICPMS	86SCI 02
210	50	35	ITNA	81GLA 04

Conc	Uncer	Com	Method	Reference
Mn (ug/g) cont.				
230			ICPES	82NAD 02
260	20	35	IENA	80GLA 03
277	7		ITNA	84GLA 02
1000		6	EXRF	84JEN 01
1010		6	EXRF	84JEN 01
Mo (ug/g)				
26	3		CPXRF	84AHL 01
27	6		ITNA	82SUZ 02
28.8	2.3		RTNA	84MOK 02
29.2	0.6		ICPMS	86SCI 02
30	4.2		CPXRF	80KIR 01
31.3	3.6		ITNA	85VOG 01
32	2		ICPES	84BOT 01
36	1	35	IENA	80GLA 03
Na (ug/g)				
1484			ICPES	85PEA 01
1560	70		AA	82NAD 02
1600	100		AA	82HAR 01
1670	20		ICPMS	86SCI 02
1680	90		ITNA	83OBR 01
1700	70		ICPES	82NAD 02
1720	50		ITNA	80GAR 01
1730	10		ITNA	84GLA 02
1740	70		ITNA	85VOG 01
1740	100	35	ITNA	81GLA 04
1750	50		ITNA	82SUZ 02
1760			ITNA	82GLA 02
1760	60		ICPES	85HAR 01
1760	80		ICPES	84BOT 01
1769			CPAA	83BIR 01
1770	50		ITNA	85SUN 01
1770	80		ITNA	85GAU 04
1800	100		ICPES	84NAD 01
1800	100	35	ITNA	81GLA 02
1900	70	17	ITNA	84KYL 01
2020	400		ITNA	82SCH 05
2100	600		TCGS	79FAI 01
2100	600	D	TCGS	80AND 01
2200	600		CPXRF	80KIR 01
Nb (ug/g)				
24	3		CPXRF	84AHL 01
31.5	2		WXRF	84KYL 01

TABLE 1633A-2: INDIVIDUAL DATA FOR NBS SRM 1633A (cont.)

Conc	Uncer	Com	Method	Reference
Nd (ug/g)				
65.6	5.4		TCGS	79FAI 01
66	5		TCGS	80AND 01
71	3	35	IENA	80GLA 03
77.3	8.9		ITNA	85SUN 01
89	5		ITNA	84SUZ 02
113	7	12	ITNA	82SUZ 02
122	13	12	ITNA	82SUZ 02
Ni (ug/g)				
92	8		CPXRF	84AHL 01
97	36		ITNA	85FIL 01
105		6	EXRF	84JEN 01
106		6	EXRF	84JEN 01
112	4.8		CPXRF	80KIR 01
117	6	35	IENA	80GLA 03
119	2		ICPES	84BOT 01
124			VOLT	84BRA 01
127	5		ICPES	85HAR 01
128	6	12	ITNA	82SUZ 02
132	4		ICPMS	86SCI 02
133	2.1		COLOR	84KAT 01
133	4	11	ICPES	85SAT 01
134	0.6		AA	84KAT 01
138	2		WXRF	84KYL 01
139	7	12	ITNA	82SUZ 02
140		11	ICPES	85SAT 01
O (%)				
47.66	0.36	34	14NAA	80KHA 02
P (ug/g)				
760	10		ICPES	85HAR 01
1320	30		ICPES	84BOT 01
1400	40		ICPES	84NAD 01
1700			XRF	81TUR 01
1744			ICPES	85PEA 01
1800	300		ICPES	82NAD 02
1840	120		ICPMS	86SCI 02
2000			AA	82NAD 02
Pb (ug/g)				
51	12	13	ICPES	84BOT 01
60	10		ICPES	85HAR 01
64	13		ICPES	84NAD 01
65	5.7		CPXRF	80KIR 01
70.4	1.2		ICPMS	86SCI 02
71.8	0.6		IDMS	83BRO 01

Conc	Uncer	Com	Method	Reference
Pb (ug/g) cont.				
72		6	EXRF	84JEN 01
72	3		POT	84PIN 01
72.4			AA	84TER 01
73		6	EXRF	84JEN 01
74	4	13	ICPES	84BOT 01
75	5		CPXRF	84AHL 01
75.1	1		WXRF	84KYL 01
75.8			EXRF	84PIN 01
75.9			ICPES	85NAR 02
Pb-210 (pCi/g)				
3.4	0.6		GAMMA	84ROS 03
3.9	0.6		NM	84ROS 03
Po-210 (pCi/g)				
3.75	0.15		RAS	84ROS 03
Pr (ug/g)				
17.9	1.7	12	ITNA	82SUZ 02
18.9	1.1	12	ITNA	82SUZ 02
Ra-226 (pCi/g)				
3.2	0.2		GAMMA	84ROS 03
Rb (ug/g)				
121	7		CPXRF	84AHL 01
124	4	12	ITNA	82SUZ 02
130	26		ITNA	80GAR 01
134	8		ITNA	84GLA 02
134	16	35	NAA	81GLA 04
135		6	EXRF	84JEN 01
136		6	EXRF	84JEN 01
138	8	12	ITNA	82SUZ 02
140	8		ITNA	85SUN 01
140.7	2		WXRF	84KYL 01
147	8	35	ITNA	81GLA 02
150	12		CPXRF	80KIR 01
163	2	35	IENA	80GLA 03
170	31		ITNA	85FIL 01
S (ug/g)				
1200			ICPES	85PEA 01
1350	90		ICPMS	86SCI 02
2300	200		CPXRF	84AHL 0
2700	200	D	TCGS	80AND 01
2700	200		TCGS	79FAI 01

TABLE 1633A-2: INDIVIDUAL DATA FOR NBS SRM 1633A (cont.)

Conc	Uncer	Com	Method	Reference
S-32/34 (ratio)				
22.641			IDMS	84KEL 01
S-33/34 (ratio)				
0.1781			IDMS	84KEL 01
Sb (ug/g)				
4.2		11	HAA	82CRO 03
4.8			AF	85NAR 02
6.3	0.2		ITNA	82SUZ 02
6.3	0.5	17	ITNA	84KYL 01
6.4	0.4	17	ITNA	84KYL 01
6.5		11	HAA	82CRO 03
6.5	0.4		HAA	85YAM 01
6.6			ITNA	82GLA 02
6.88	0.28		ICPMS	86SCI 02
6.9	0.3		ITNA	85VOG 01
6.9	0.7		ITNA	85FIL 01
6.95	0.22	35	ITNA	81GLA 02
7.3	0.2		RTNA	81SLO 01
7.49	0.39		ITNA	85SUN 01
7.7	0.5	35	IENA	80GLA 03
7.8	1.5		ITNA	80GAR 01
8.96			HAA	84TER 04
10.1	3.1	13	ICPES	84BOT 01
Sc (ug/g)				
34	1		ITNA	82SUZ 02
34	4.2		CPXRF	80KIR 01
36			ITNA	82GLA 02
37	2		ITNA	85FIL 01
38.8	0.7	17	ITNA	84KYL 01
38.9	0.6		ITNA	85SUN 01
39	2		ITNA	84GLA 02
39.8	0.8	17	ITNA	84KYL 01
40	1	35	ITNA	81GLA 02
40.3	0.8		ICPES	85HAR 01
40.3	0.8		ITNA	85VOG 01
40.8	1.3		ITNA	80GAR 01
41	2	35	ITNA	81GLA 04
43	1	35	IENA	80GLA 03
Se (ug/g)				
6.2			AF	85NAR 02
7		6	EXRF	84JEN 01
7		6	EXRF	84JEN 01
7.8	2.1		CPXRF	80KIR 01
8.8	0.4	9	ITNA	82SUZ 02

Conc	Uncer	Com	Method	Reference
Se (ug/g) cont.				
9.4	0.3	35	RTNA	81GLA 01
9.4	0.5		RTNA	81SLO 01
9.5	1.2		CPXRF	84AHL 01
9.8	0.5		HAA	85YAM 01
10	2	35	IENA	80GLA 03
10.2	0.6	9	ITNA	82SUZ 02
10.4	5.4		ICPES	84BOT 01
10.6			ICPES	85NAR 02
10.62	0.09		HAA	85CHA 01
10.7	0.8	35	NAA	81GLA 04
10.8	0.3	D	HAA	84IMA 03
10.8	0.3	7	HAA	84IMA 01
12	5		ICPMS	86SCI 02
12.7	1.3		ITNA	84SUZ 02
13	3		ITNA	85FIL 01
Si (%)				
18	0.93		CPXRF	80KIR 01
18.5	1.1		ICPES	84NAD 01
20.4	1.1		CPXRF	84AHL 01
21	2		TCGS	85VOG 01
22.16	0.29		ICPMS	86SCI 02
22.2	0.4		TCGS	79FAI 01
22.2	0.4	D	TCGS	80AND 01
22.4		6	EXRF	84JEN 01
22.5		6	EXRF	84JEN 01
22.9764	0.0934		ICPES	85PEA 01
23	0.2	16	EXRF	82PEL 01
23.13	0.2	16	EXRF	82PEL 01
23.16	0.2	16	EXRF	82PEL 01
23.37	0.23		ICPES	82NAD 02
23.5	0.2	11	ICPES	85SAT 01
23.9	0.5		AA	82GLA 02
23.9	0.5	35	IENA	80GLA 03
24	0.3	11	ICPES	85SAT 01
24.2	0.8		AA	82NAD 02
Sm (ug/g)				
14.5	1.3	35	ITNA	81GLA 04
15	1		ITNA	85FIL 01
16	0.2		TCGS	79FAI 01
16	0.2	D	TCGS	80AND 01
16.1	1.5	4	TCGS	85GLA 05
16.2	1.5	4	TCGS	85GLA 05
16.3	0.5		ITNA	85SUN 01
16.4	0.1		ITNA	82GLA 02
16.6	0.3		ITNA	85VOG 01
16.7			ITNA	84GLA 02
16.9	0.5		TCGS	85VOG 01

TABLE 1633A-2: INDIVIDUAL DATA FOR NBS SRM 1633A (cont.)

Conc	Uncer	Com	Method	Reference
Sm (ug/g) cont.				
17	0.3	17	ITNA	84KYL 01
17.1	0.2	17	ITNA	84KYL 01
18.8	0.6		ITNA	83OBR 01
19.4	0.7		ITNA	82SUZ 02
20	4.4		ITNA	80GAR 01
21	1		ITNA	84SUZ 02
Sn (ug/g)				
3.96	0.12		ICPMS	86SCI 02
6.3	0.2		FAA	84LON 01
6.36	0.15		FAA	85TER 01
14.8			AF	85NAR 02
18.5			ICPES	85NAR 02
Sr (ug/g)				
717	26		ICPES	84NAD 01
740	20	5	IENA	80GLA 03
742	23		ITNA	85SUN 01
750	40		CPXRF	84AHL 01
770		35	IENA	81GLA 04
790	30		ICPES	84BOT 01
790	79		ITNA	85FIL 01
813	70		ITNA	83OBR 01
815	7		IENA	84GLA 02
815	10	11	ICPES	85SAT 01
819	54		ITNA	80GAR 01
825	40		CPXRF	80KIR 01
829	22		IENA	84GLA 11
834.5	2		WXRF	84KYL 01
840	10		ICPES	85HAR 01
840	30	5	IENA	80GLA 03
840	40	12	ITNA	82SUZ 02
850	70	12	ITNA	82SUZ 02
882		6	EXRF	84JEN 01
890		6	EXRF	84JEN 01
Ta (ug/g)				
1.71	0.05		ITNA	82SUZ 02
1.8	0.07		ITNA	84SUZ 02
1.8	0.1		ITNA	84GLA 02
1.8	0.12	35	ITNA	81GLA 02
1.8	0.2	35	NAA	81GLA 04
1.94			ITNA	82GLA 02
2.0	0.1	17	ITNA	84KYL 01
2.0	0.5		ITNA	80GAR 01
2.1	0.2	35	IENA	80GLA 03
2.11	0.16		ITNA	85SUN 01
2.3	0.1	17	ITNA	84KYL 01
2.3	0.2		ITNA	85FIL 01

Conc	Uncer	Com	Method	Reference
Tb (ug/g)				
2.1	0.1		ITNA	82SUZ 02
2.1	0.2		ITNA	84GLA 02
2.2	0.1		ITNA	84SUZ 02
2.3	0.7		ITNA	80GAR 01
2.5	0.1	17	ITNA	84KYL 01
2.6	0.1	17	ITNA	84KYL 01
2.75	0.18		ITNA	85SUN 01
2.8	0.5	35	NAA	81GLA 04
2.9	0.1	35	IENA	80GLA 03
4.7	1.7		ITNA	85FIL 01
Te (ug/g)				
<	3.5		ITNA	84SUZ 02
<	6.6	L	ITNA	82SUZ 02
Th (ug/g)				
11		6	EXRF	84JEN 01
11		6	EXRF	84JEN 01
18	3		CPXRF	84AHL 01
22.4			ITNA	82GLA 02
23.2	0.8		ICPMS	86SCI 02
24	2		ITNA	85FIL 01
24.3	3.8	12	ITNA	82SUZ 02
24.6	0.9	35	NAA	81GLA 04
24.6	1.1	35	ITNA	81GLA 02
24.7	1.2		ITNA	85VOG 01
24.7	1.4	17	ITNA	84KYL 01
24.8	0.5		ITNA	84GLA 02
24.8	1.6		ITNA	80GAR 01
25	0.7		ITNA	84SUZ 02
25	1	35	IENA	80GLA 03
25.6	1	17	ITNA	84KYL 01
25.6	2.8		ITNA	86GAU 01
26	0.4		ITNA	85SUN 01
26	1.3	12	ITNA	82SUZ 02
27.9	1		WXRF	84KYL 01
28	8.3		CPXRF	80KIR 01
Th-232 (pCi/g)				
2.4	0.2		GAMMA	84ROS 03

TABLE 1633A-2: INDIVIDUAL DATA FOR NBS SRM 1633A (cont.)

Conc	Uncer	Com	Method	Reference
Ti (ug/g)				
6660		6	EXRF	84JEN 01
6700	200		ICPES	84NAD 01
6710		6	EXRF	84JEN 01
7400	200	16	EXRF	82PEL 01
7700	300		ICPES	84BOT 01
7800	300		ITNA	82SUZ 02
7880	540		ITNA	83OBR 01
7940	90	11	ICPES	85SAT 01
8000	40		ICPMS	86SCI 02
8000	600	35	NAA	81GLA 04
8000	800		CPXRF	80KIR 01
8060	370		ITNA	80GAR 01
8100	100		ICPES	85HAR 01
8200	700	35	ITNA	81GLA 02
8300			ITNA	84GLA 02
8300	500		CPXRF	84AHL 01
8320	70		ITNA	85VOG 01
8386			ICPES	85PEA 01
8400	60		ICPES	82NAD 02
8400	100	35	IENA	80GLA 03
8400	100	D	TCGS	80AND 01
8400	100	16	EXRF	82PEL 01
8400	100	16	EXRF	82PEL 01
8400	100		TCGS	79FAI 01
8600	500		TCGS	85VOG 01
8855	830		ITNA	85SUN 01
9000			AA	82NAD 02
9000	1440		ITNA	85FIL 01
Tl (ug/g)				
4.4	1.3		CPXRF	80KIR 01
5.7	0.2		ICPMS	86SCI 02
5.7	0.7		IENA	85RUC 01
Tm (ug/g)				
2.4	0.1		ITNA	84SUZ 02
U (ug/g)				
8.9	0.7		ITNA	85FIL 01
9.66	0.25		ITNA	85SUN 01
9.7	0.8		ITNA	84SUZ 02
9.83	0.9		IENA	83OBR 01
10.2	0.02		ICPMS	86SCI 02
10.2	0.1	35	IENA	80GLA 03
10.2	0.2		DNA	80GAR 01
10.2	0.3		DNA	82GLA 02
10.2	0.8		FLUOR	86KAN 01
10.3	0.2		DNA	85GAU 04

Conc	Uncer	Com	Method	Reference
U (ug/g) cont.				
10.3	0.4		ITNA	82SUZ 02
10.3	0.4		DNA	84GLA 11
10.4	0.1		DNA	85GLA 04
10.4	0.3	17	DNA	82CON 01
10.4	0.5		ITNA	85VOG 01
10.4	0.8		DNA	84GLA 02
10.47	0.09	35	DNA	80GLA 01
10.47	0.15		DNA	86GAU 01
10.6	0.4	35	NAA	81GLA 04
10.7	0.3	17	DNA	82CON 01
11	2.7		CPXRF	80KIR 01
U-238 (pCi/g)				
3.6	0.3		GAMMA	84ROS 03
V (ug/g)				
206	56		CPXRF	84AHL 01
271	14		ITNA	85SUN 01
277	5	11	ICPES	85SAT 01
279	8		ICPES	84NAD 01
280			ICPES	81WAL 01
280	18		CPXRF	80KIR 01
288	20		ITNA	83OBR 01
289	3		ITNA	85VOG 01
290	20		ITNA	82SUZ 02
290	20	35	IENA	80GLA 03
292	16	35	ITNA	81GLA 02
294	28	35	ITNA	81GLA 04
295	5		ICPES	85HAR 01
301	8		ITNA	80GAR 01
304	5	11	ICPES	85SAT 01
305	5		ICPES	84BOT 01
324	16		ICPMS	86SCI 02
344	30		ITNA	85FIL 01
360	40		TCGS	79FAI 01
360	40	D	TCGS	80AND 01
W (ug/g)				
4.71	0.37		ITNA	85SUN 01
5.4	0.4	35	IENA	80GLA 03
5.4	0.4	D	NAA	81GLA 04
5.4	0.8		ITNA	83OBR 01
5.9	0.4		ITNA	82SUZ 02
6.4	0.6		ITNA	84SUZ 02
6.9	1.2		RENA	82GLA 02

TABLE 1633A-2: INDIVIDUAL DATA FOR NBS SRM 1633A (cont.)

Conc	Uncer	Com	Method	Reference
Y (ug/g)				
74	5		CPXRF	84AHL 01
81		6	EXRF	84JEN 01
82		6	EXRF	84JEN 01
89	4		ICPES	85HAR 01
101.4	1		WXRF	84KYL 01
Yb (ug/g)				
6.02	0.26		ITNA	85SUN 01
6.9	0.3		ITNA	82SUZ 02
7.2	0.3		ITNA	84GLA 11
7.5	0.2	17	ITNA	84KYL 01
7.5	0.3	17	ITNA	84KYL 01
7.5	0.5		ITNA	82GLA 02
8.2		35	ITNA	81GLA 04
8.3	0.7		ITNA	84SUZ 02
10	1.8		ITNA	80GAR 01
Zn (ug/g)				
189		6	AF	84NAR 02
191			ICPES	85NAR 02
191		6	AF	84NAR 02
196			AF	85NAR 02
201	11		CPXRF	84AHL 01
218	18		CPXRF	80KIR 01
220	10		ICPES	84BOT 01
220	50		ITNA	80GAR 01
222	7	5	IENA	80GLA 03
225	32		AA	82HAR 01
226	19		ICPES	84NAD 01
230			AA	82GLA 02
230	8		ICPMS	86SCI 02
233	3	11	ICPES	85SAT 01
235		6	EXRF	84JEN 01
237		6	EXRF	84JEN 01
243	10	11	ICPES	85SAT 01
245	3		ICPES	85HAR 01
250	20	12	ITNA	82SUZ 02
250	30	12	ITNA	82SUZ 02
256	12	5	IENA	80GLA 03
263	2		WXRF	84KYL 01
Zr (ug/g)				
220	13		CPXRF	84AHL 01
262.1	1.5		WXRF	84KYL 01
300	30	5	IENA	80GLA 03
370	50	5	IENA	80GLA 03
400	50	12	ITNA	82SUZ 02
410	40	12	ITNA	82SUZ 02

TABLE 1634-1: COMPILED DATA FOR NBS SRM 1634 TRACE METALS IN FUEL OIL (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		OTHER METHODS		
		Mean ± SD	Mean ± SD	(n)			Mean	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method
As	ng/g	95	70 ± 15	(5)	63	56 - 95	---		70 ± 15	(5)	---		---		
Au	ng/g	---	24.5	(1)	---	---	---		24.5	(1)	---		---		
Be	ng/g	< 10	---		---	---	---		---		---		---		
Br	ng/g	---	39.8 ± 0.9	(4)	39.1	39 - 41	---		40 ± 1	(3)	---		---		
Ca	ug/g	---	15	(1)	---	---	---		15	(1)	---		---		
Cd	ng/g	< 10	5	(1)	---	---	5	(1)	---		---		---		
Cl	ug/g	---	8.1 ± 0.3	(3)	8	7.8 - 8.4	---		8.2	(2)	---		---		
Co	ng/g	---	310 ± 50	(6)	301	250 - 400	---		320 ± 50	(5)	---		---		
Cr	ng/g	90	97 ± 15	(4)	93	80 - 116	---		97 ± 15	(4)	---		---		
Cu	ng/g	---	220	(1)	---	---	---		220	(1)	---		---		
Eu	ng/g	---	11	(1)	---	---	---		11	(1)	---		---		
Fe	ug/g	13.5 ± 1.0	14 ± 2	(17)	14.1	10.8 - 20	14.1	(1)	19 ± 6	(6)	15 ± 4	(3)	14 ± 2	(7)	XRF
Fe	ug/g	---	---		---	---	---		---		---		12.3	(1)	POL
Hg	ng/g	2.3	2.3	(2)	---	2.3 - 2.3	---		2.3	(2)	---		---		
K	ug/g	---	315	(1)	---	---	---		315	(1)	---		---		
Mn	ng/g	120	200 ± 90	(4)	190	110 - 320	---		200 ± 90	(4)	---		---		
Mo	ng/g	---	870	(1)	---	---	---		870	(1)	---		---		
Na	ug/g	---	12 ± 2	(5)	12	11.2 - 15.3	---		12.9 ± 1.8	(4)	---		---		
Ni	ug/g	36 ± 4	35.4 ± 2.5	(20)	35.2	31.1 - 39.5	31.1	(1)	37 ± 3	(4)	35.6 ± 1.0	(3)	34 ± 2	(7)	XRF
Ni	ug/g	---	---		---	---	---		---		---		38.13 ± 0.06	(3)	IDMS
Ni	ug/g	---	---		---	---	---		---		---		35.2	(1)	POL
Pb	ng/g	41 ± 5	45.5	(2)	---	41 - 50	50	(1)	---		---		41	(1)	POL
S	%	2.14 ± 0.02	2.13 ± 0.11	(10)	2.15	2 - 2.3	---		2.19 ± 0.14	(3)	2.20	(2)	2.17	(1)	XRF
S	%	---	---		---	---	---		---		---		2.00	(1)	MECA
S	%	---	---		---	---	---		---		---		2.00	(1)	TITR
S	%	---	---		---	---	---		---		---		2.15	(1)	IC
Sb	ng/g	---	11 ± 2	(3)	10	10 - 14	---		11 ± 2	(3)	---		---		
Sc	ug/g	---	1.38	(1)	---	---	---		1.38	(1)	---		---		
Se	ng/g	---	170 ± 26	(5)	170	138 - 200	---		170 ± 26	(5)	---		---		
V	ug/g	320 ± 15	312 ± 11	(17)	311	283 - 326	326	(1)	299 ± 20	(5)	318 ± 4	(3)	309 ± 14	(7)	XRF
V	ug/g	---	---		---	---	---		---		---		317	(1)	GC
Zn	ug/g	0.23 ± 0.05	0.32 ± 0.16	(3)	0.3	0.17 - 0.48	---		0.32 ± 0.16	(3)	---		---		

TABLE 1634-2: INDIVIDUAL DATA FOR NBS SRM 1634 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
As (ng/g)				
56			ITNA	77FIL 01
62	13		ITNA	85FIL 02
63	3		ITNA	78BER 02
70			ITNA	78WEA 01
95			RTNA	74ORV 01
120			ITNA	81SHA 01
Au (ng/g)				
24.5	0.7		ITNA	73SHE 01
Br (ng/g)				
39			ITNA	77FIL 01
39.1	5.3		UU	77PAC 01
40			ITNA	78WEA 01
41	4		ITNA	78BER 02
240	70		ITNA	73SHE 01
330	90		ITNA	85FIL 02
Ca (ug/g)				
15	2		ITNA	73SHE 01
Cd (ng/g)				
<	10	L	RTNA	74ORV 01
5			FAA	74RAI 01
Cl (ug/g)				
7.8	0.5		UU	77PAC 01
8			ITNA	78WEA 01
8.4	0.5		ITNA	78BER 02
18	0.7		ITNA	73SHE 01
Co (ng/g)				
250	10		ITNA	73SHE 01
301			ITNA	77FIL 01
301	14		UU	77PAC 01
310	15		ITNA	78BER 02
330	60		ITNA	85FIL 02
400			ITNA	78WEA 01
Cr (ng/g)				
80			ITNA	81SHA 01
93			ITNA	77FIL 01
100			ITNA	78WEA 01
116	35		ITNA	73SHE 01
220	60		ITNA	85FIL 02

Conc	Uncer	Com	Method	Reference
Cu (ng/g)				
<	800	L	EXRF	79GIA 01
220	20		ITNA	73SHE 01
Eu (ng/g)				
11	4		ITNA	85FIL 02
Fe (ug/g)				
10.8	3.3	32	EXRF	78KUB 01
12.3			POL	74MAI 01
12.4	1.6		ITNA	73SHE 01
12.5	2.2		UU	77PAC 01
12.7	3		EXRF	80SCH 07
13			ICPES	79MER 01
13.4	0.2		ICPES	83BRO 02
13.5	1.2		ITNA	81SHA 01
14	1.5		EXRF	79GIA 01
14.1	0.6		AA	74RAI 01
14.2	1.5		ITNA	78BER 02
14.4	1.7	32	EXRF	78KUB 01
15.1	2.4	32	EXRF	78KUB 01
16.2	2.8	32	EXRF	78KUB 01
16.9	2.5	32	EXRF	78KUB 01
20			ITNA	77FIL 01
20	2		ICPES	84BAR 03
25			ITNA	78WEA 01
27.5	6.5		ITNA	85FIL 02
Hg (ng/g)				
<	10	L	ITNA	81SHA 01
<	10		ITNA	77FIL 01
2.3	0.2		RTNA	84DEL 01
2.3	0.2		RTNA	74ORV 01
22	15		ITNA	73SHE 01
K (ug/g)				
315			ITNA	77FIL 01
Mn (ng/g)				
110	10		ITNA	78BER 02
190			ITNA	73SHE 01
200			ITNA	81SHA 01
320			ITNA	78WEA 01
Mo (ng/g)				
870	80		ITNA	78BER 02

TABLE 1634-2: INDIVIDUAL DATA FOR NBS SRM 1634 (cont.)

Conc	Uncer	Com	Method	Reference
Na (ug/g)				
11.2			ITNA	77FIL 01
11.2	0.7		UU	77PAC 01
12			ITNA	78WEA 01
13.2	1.5		ITNA	78BER 02
15.3	1.9		ITNA	85FIL 02
Ni (ug/g)				
31.1	2.1		AA	74RAI 01
32	1	32	EXRF	78KUB 01
32	1.6		EXRF	79GIA 01
32	2	32	EXRF	78KUB 01
33	1	32	EXRF	78KUB 01
33	2.3		ITNA	85FIL 02
35	0.3		ICPES	83BRO 02
35	2		ICPES	84BAR 03
35	2	32	EXRF	78KUB 01
35.2			POL	74MAI 01
36	1	32	EXRF	78KUB 01
36.7			ICPES	79MER 01
36.9	2.7		EXRF	80SCH 07
37	2		ITNA	78BER 02
37.4			ITNA	77FIL 01
37.4	1.5		UU	77PAC 01
38.1		6	IDMS	74MOO 01
38.1		6	IDMS	74MOO 01
38.2		6	IDMS	74MOO 01
39.5	2.26		ITNA	73SHE 01
Pb (ng/g)				
<	500		ICPES	79MER 01
<	1500	L	EXRF	79GIA 01
41			POL	74MAI 01
50			FAA	74RAI 01
S (%)				
2	0.1		TITR	80MCC 01
2	0.2		MECA	80MCC 01
2.04	0.39		ITNA	73SHE 01
2.05	0.4		UU	77PAC 01
2.15	0.02		ICPES	84BAR 03
2.154	0.009		IC	80MCC 01
2.17			XRF	80MCC 01
2.24	0.05		ITNA	81SHA 01
2.24	0.05		ICPES	81WAL 02
2.3	0.3		ITNA	78BER 02

Conc	Uncer	Com	Method	Reference
Sb (ng/g)				
10			ITNA	77FIL 01
10			ITNA	78WEA 01
14	3		ITNA	73SHE 01
90	110		ITNA	85FIL 02
Sc (ug/g)				
1.38	0.76		ITNA	85FIL 02
Se (ng/g)				
138	60		RTNA	74ORV 01
151	58		ITNA	85FIL 02
170			ITNA	77FIL 01
190	30		ITNA	73SHE 01
200			ITNA	78WEA 01
V (ug/g)				
266	18		ITNA	73SHE 01
283	12		EXRF	79GIA 01
300			ITNA	81SHA 01
301	15		ITNA	85FIL 02
303	18	32	EXRF	78KUB 01
306	24		EXRF	80SCH 07
310			ITNA	78WEA 01
310	5	32	EXRF	78KUB 01
311	7	32	EXRF	78KUB 01
312	16.4		UU	77PAC 01
314			ICPES	79MER 01
317	6		GC	81DIL 01
318			ICPES	84BAR 03
318	15		ITNA	78BER 02
323	4		ICPES	83BRO 02
323	9	32	EXRF	78KUB 01
325	11	32	EXRF	78KUB 01
326	6.8		AA	74RAI 01
Zn (ug/g)				
<	0.6		ICPES	79MER 01
<	0.6	L	EXRF	79GIA 01
<	1	L	ITNA	81SHA 01
0.17	0.02		RTNA	74ORV 01
0.3			ITNA	78WEA 01
0.48	0.12		ITNA	73SHE 01
1.0	0.4		ITNA	85FIL 02

TABLE 1634A-1: COMPILED DATA FOR NBS SRM 1634A TRACE METALS IN FUEL OIL (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	NAA		ICPES			XRF		OTHER METHODS		
		Mean ± SD	Mean ± SD	(n)			Mean	(n)	Mean ± SD		(n)	Mean	(n)	Mean	(n)	Method
As	ng/g	120	141	(1)	---	---	141	(1)	---			---		---		
Ba	ug/g	---	5.98	(1)	---	---	5.98	(1)	---			---		---		
Be	ng/g	6	---		---	---	---		---			---		---		
Br	ug/g	< 1	0.88	(1)	---	---	0.88	(1)	---			---		---		
Ca	ug/g	16	16.8	(2)	---	16 - 17.5	---		16		(1)	17.5	(1)	---		
Cd	ng/g	2	---		---	---	---		---			---		---		
Ce	ng/g	---	757	(1)	---	---	757	(1)	---			---		---		
Cl	ug/g	31	42	(2)	---	35 - 49.9	42.45	(2)	---			---		---		
Co	ng/g	300	440	(2)	---	280 - 600	600	(1)	280		(1)	---		---		
Cr	ug/g	0.7	0.71	(2)	---	0.6 - 0.82	0.82	(1)	0.6		(1)	---		---		
Cs	ng/g	---	22	(1)	---	---	22	(1)	---			---		---		
Cu	ug/g	---	< 1		---	---	---		---			< 1		---		
Eu	ug/g	---	11.6	(1)	---	---	11.6	(1)	---			---		---		
Fe	ug/g	31	32 ± 6	(5)	30.8	26 - 41	41	(1)	28.4		(2)	30.6	(2)	---		
Ga	ng/g	---	106	(1)	---	---	106	(1)	---			---		---		
Hg	ug/g	< 2	< 1.9		---	---	---		---			< 1.9		---		
K	ug/g	---	< 4.5		---	---	---		---			< 4.5		---		
La	ug/g	---	2.04	(1)	---	---	2.04	(1)	---			---		---		
Mn	ng/g	190 ± 20	195	(2)	---	180 - 210	---		195		(2)	---		---		
Mo	ng/g	---	110	(1)	---	---	---		110		(1)	---		---		
N	%	---	1.23	(1)	---	---	---		---			---		1.23	(1)	IC
Na	ug/g	87 ± 4	102	(1)	---	---	102	(1)	---			---		---		
Nd	ug/g	---	0.9	(1)	---	---	0.9	(1)	---			---		---		
Ni	ug/g	29 ± 1	27.5 ± 1.1	(8)	27	26 - 29.2	26.3	(1)	27.6 ± 1.0		(4)	28.4	(2)	26	(1)	AA
P	ug/g	---	1090	(1)	---	---	---		---			1090	(1)	---		
Pb	ug/g	2.8 ± 0.08	2.3 ± 0.3	(3)	2.13	2.13 - 2.68	---		2.68		(1)	2.13	(2)	---		
Rb	ng/g	---	< 610		---	---	---		---			< 610		---		
S	%	2.85 ± 0.05	2.86 ± 0.03	(6)	2.848	2.82 - 2.91	---		2.89		(2)	2.86	(2)	2.83	(2)	WM
S	%	---	---		---	---	---		---			---		2.12	(1)	IC
Sb	ng/g	---	34	(1)	---	---	34	(1)	---			---		---		
Sc	ug/g	---	2.3	(1)	---	---	2.3	(1)	---			---		---		
Se	ng/g	150 ± 20	190	(1)	---	---	190	(1)	---			---		---		
Si	ug/g	---	< 270		---	---	---		---			< 270		---		
Sm	ug/g	---	43	(1)	---	---	43	(1)	---			---		---		
Sr	ug/g	---	< 4.3		---	---	---		---			< 4.3		---		
Ti	ug/g	---	< 11		---	---	---		---			< 11		---		
V	ug/g	56 ± 2	55.6 ± 1.6	(8)	55.5	54 - 58.5	58.5	(1)	56.2 ± 0.8		(4)	54	(2)	54	(1)	AA
Zn	ug/g	2.7 ± 0.2	2.83 ± 0.17	(5)	2.89	2.54 - 3.0	2.89	(1)	2.67		(2)	2.95	(2)	---		

TABLE 1634A-2: INDIVIDUAL DATA FOR NBS SRM 1634A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
As (ng/g)				
< 650		32	EXRF	83SAN 02
< 650		32	EXRF	83SAN 02
141	17		ITNA	85FIL 02
Ba (ug/g)				
5.98	1.77		ITNA	85FIL 02
Br (ug/g)				
< 0.5		32	EXRF	83SAN 02
< 0.5		32	EXRF	83SAN 02
0.88	0.19		ITNA	85FIL 02
Ce (ug/g)				
< 42		32	EXRF	83SAN 02
16	1		ICPES	84BAR 03
17.5	2.2	32	EXRF	83SAN 02
Ce (ng/g)				
757	64		ITNA	85FIL 02
Cl (ug/g)				
< 68		32	EXRF	83SAN 02
< 350		32	EXRF	83SAN 02
35			ITNA	86GAU 01
49.9	3.4		ITNA	83LI 01
Co (ng/g)				
< 1400		32	EXRF	83SAN 02
< 1400		32	EXRF	83SAN 02
280	60		ICPES	83MAH 05
600	370		ITNA	85FIL 02
Cr (ug/g)				
< 4.8		32	EXRF	83SAN 02
< 4.8		32	EXRF	83SAN 02
0.6			ICPES	85NG 01
0.82	0.11		ITNA	85FIL 02
Cs (ng/g)				
22	9		ITNA	85FIL 02

Conc	Uncer	Com	Method	Reference
Cu (ug/g)				
< 1		32	EXRF	83SAN 02
< 1		32	EXRF	83SAN 02
Eu (ug/g)				
11.6	5.5		ITNA	85FIL 02
Fe (ug/g)				
26	4		ICPES	84BAR 03
30.4	1.1	32	EXRF	83SAN 02
30.8	0.4		ICPES	83MAH 05
30.8	1.1	32	EXRF	83SAN 02
41	7.2		ITNA	85FIL 02
Ga (ng/g)				
< 450		32	EXRF	83SAN 02
< 450		32	EXRF	83SAN 02
106	25		ITNA	85FIL 02
Hg (ug/g)				
< 1.9		32	EXRF	83SAN 02
< 1.9		32	EXRF	83SAN 02
K (ug/g)				
< 4.5		32	EXRF	83SAN 02
< 66		32	EXRF	83SAN 02
La (ug/g)				
2.04	0.18		ITNA	85FIL 02
Mn (ng/g)				
< 2600		32	EXRF	83SAN 02
< 2600		32	EXRF	83SAN 02
180	4		ICPES	83MAH 05
210			ICPES	85NG 01
Mo (ng/g)				
110	3		ICPES	83MAH 05
N (%)				
1.23	0.02		IC	83NAD 01

TABLE 1634A-2: INDIVIDUAL DATA FOR NBS SRM 1634A (cont.)

Conc	Uncer	Com	Method	Reference
Na (ug/g)				
102	16		ITNA	85FIL 02
Nd (ug/g)				
0.9	0.26		ITNA	85FIL 02
Ni (ug/g)				
26			AA	85FAB 01
26.3	2.5		ITNA	85FIL 02
27			ICPES	85NG 01
27	2		ICPES	84BAR 03
27.3	0.4		ICPES	85FAB 01
28.4	1.3	32	EXRF	83SAN 02
28.5	1.3	32	EXRF	83SAN 02
29.2	0.5		ICPES	83MAH 05
P (ug/g)				
< 1500		32	EXRF	83SAN 02
1090	53	32	EXRF	83SAN 02
Pb (ug/g)				
2.13	0.87	32	EXRF	83SAN 02
2.13	0.87	32	EXRF	83SAN 02
2.68	0.03		ICPES	83MAH 05
Rb (ng/g)				
< 610		32	EXRF	83SAN 02
< 610		32	EXRF	83SAN 02
S (%)				
2.12	0.01		IC	83NAD 01
2.82	0.1	7	NM	83LI 01
2.84	0.08	7	NM	83LI 01
2.848	0.09	32	EXRF	83SAN 02
2.87	0.02		ICPES	85FAB 01
2.881	0.027	32	EXRF	83SAN 02
2.91	0.02		ICPES	84BAR 03
Sb (ng/g)				
34	31		ITNA	85FIL 02
Sc (ug/g)				
2.3	1.6		ITNA	85FIL 02
Se (ng/g)				
< 540		32	EXRF	83SAN 02
< 540		32	EXRF	83SAN 02
190	50		ITNA	85FIL 02
Si (ug/g)				
< 270		32	EXRF	83SAN 02
< 3000		32	EXRF	83SAN 02
Sm (ug/g)				
43	3.8		ITNA	85FIL 02
Sr (ug/g)				
< 4.3		32	EXRF	83SAN 02
< 4.3		32	EXRF	83SAN 02
Ti (ug/g)				
< 11		32	EXRF	83SAN 02
< 11		32	EXRF	83SAN 02
V (ug/g)				
54			AA	85FAB 01
54	4	32	EXRF	83SAN 02
54	4	32	EXRF	83SAN 02
55.5			ICPES	85NG 01
55.5	1		ICPES	83MAH 05
56.7	0.7		ICPES	85FAB 01
57	2		ICPES	84BAR 03
58.5	5		ITNA	85FIL 02
Zn (ug/g)				
2.54	0.03		ICPES	83MAH 05
2.8	0.3		ICPES	84BAR 03
2.89	0.92		ITNA	85FIL 02
2.9	0.5	32	EXRF	83SAN 02
3	0.5	32	EXRF	83SAN 02

TABLE 1634B-1: COMPILED DATA FOR NBS SRM 1634B TRACE ELEMENTS IN FUEL OIL
(revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD
ASH	ug/g	700
Al	ug/g	16
As	ng/g	120 ± 20
Ba	ug/g	1.3
Ca	ug/g	15
Co	ng/g	320 ± 40
Cr	ug/g	0.7
Fe	ug/g	31.6 ± 2.0
HEAT	BTU/lb	18100
Hg	ng/g	< 1
Mn	ng/g	230 ± 30
Na	ug/g	90
Ni	ug/g	28 ± 2
Pb	ug/g	2.8
S	%	2.80 ± 0.05
Se	ng/g	180 ± 40
V	ug/g	55.4 ± 1.1
Zn	ug/g	3.0 ± 0.2

TABLE 1635-1: COMPILED DATA FOR NBS SRM 1635 TRACE ELEMENTS IN COAL (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		OTHER METHODS					
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean	(n)	Method	Mean ± SD	(n)	Method
ASH	%	---	4.65	(2)	---	4.5 - 4.8	---		---		4.8	(1)	CB	---		
Ag	ng/g	---	< 38		---	---	---		< 38		< 2500		XRF	---		
Al	ug/g	3200	2950 ± 270	(11)	2960	2600 - 3400	2750	(2)	2930 ± 170	(6)	2976	(2)	ICPES	3400	(1)	TCGS
As	ng/g	420 ± 150	404 ± 76	(11)	400	280 - 530	360 ± 56	(5)	460 ± 60	(5)	---			330	(1)	AF
Au	ng/g	---	< 6		---	---	---		< 6		---			---		
B	ug/g	---	115 ± 17	(3)	105	104.5 - 135	---		135	(1)	---			105	(2)	TCGS
Ba	ug/g	---	73 ± 5	(7)	72	67 - 81	---		72 ± 4	(6)	81	(1)	XRF	---		
Be	ug/g	---	0.48 ± 0.02	(3)	0.49	0.46 - 0.49	0.48 ± 0.02	(3)	---		---			---		
Bi	ug/g	---	< 1		---	---	---		---		< 1		XRF	---		
Br	ug/g	---	1.4 ± 0.4	(6)	1.22	0.84 - 1.90	---		1.4 ± 0.4	(6)	---			---		
C	%	---	62.6	(2)	---	59 - 66.23	---		---		66.23	(1)	CB	59	(1)	TCGS
Ca	ug/g	---	5350 ± 340	(11)	5400	4800 - 5834	5600	(2)	5220 ± 350	(6)	5460	(2)	ICPES	5400	(1)	TCGS
Cd	ng/g	30 ± 10	29	(1)	---	---	---		29	(1)	---			---		
Ce	ug/g	3.6	3.40 ± 0.14	(6)	3.4	3.2 - 3.60	---		3.40 ± 0.14	(6)	---			---		
Cl	ug/g	---	26.8 ± 1.0	(4)	26	26 - 28	---		26.5	(2)	28	(1)	IC	26	(1)	TCGS
Co	ng/g	650	621 ± 19	(9)	620	590 - 650	610	(2)	624 ± 20	(7)	700	(1)	XRF	---		
Cr	ug/g	2.5 ± 0.3	2.3 ± 0.3	(12)	2.48	1.9 - 2.9	2.7 ± 0.7	(4)	2.3 ± 0.2	(8)	2	(1)	XRF	---		
Cs	ng/g	---	53 ± 7	(3)	53	46 - 60	---		53 ± 7	(3)	---			---		
Cu	ug/g	3.6 ± 0.3	3.60 ± 0.05	(6)	3.6	3.56 - 3.70	3.62 ± 0.05	(4)	3.56	(2)	3	(1)	XRF	---		
Dy	ng/g	---	330	(2)	---	310 - 350	---		330	(2)	---			---		
Er	ng/g	---	< 2000		---	---	---		---		< 2000		XRF	---		
Eu	ng/g	60	62 ± 3	(4)	61	59 - 66	---		62 ± 3	(4)	---			---		
F	ug/g	---	53 ± 30	(3)	63	20 - 77	---		---		77	(1)	IC	41.5	(2)	ISE
Fe	ug/g	2390 ± 50	2290 ± 60	(11)	2300	2180 - 2380	2300	(2)	2280 ± 60	(7)	2380	(1)	ICPES	2200	(1)	TCGS
Ga	ug/g	1.05	1.1	(1)	---	---	---		---		1.1	(1)	XRF	---		
Gd	ng/g	---	340 ± 105	(3)	350	230 - 440	---		440	(1)	290	(2)	TCGS	---		
Ge	ug/g	---	0.5	(1)	---	---	---		---		0.5	(1)	XRF	---		
H	%	---	4.07	(2)	---	3.96 - 4.18	---		---		4.18	(1)	CB	3.96	(1)	TCGS
H2O-	%	---	15.4	(2)	---	14 - 16.8	---		---		16.8	(1)	GRAV	14	(1)	FD
Hf	ng/g	290	288 ± 33	(6)	290	240 - 340	---		288 ± 33	(6)	---			---		
Hg	ng/g	---	20	(2)	---	5 - 35	5	(1)	35	(1)	---			---		
Ho	ng/g	---	49	(1)	---	---	---		49	(1)	---			---		

TABLE 1635-1: COMPILED DATA FOR NBS SRM 1635 TRACE ELEMENTS IN COAL (cont.)

ELEMENT	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		OTHER METHODS					
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean	(n)	Method	Mean ± SD	(n)	Method
I	ng/g	---	600	(1)	---	---	---		600	(1)	---			---		
In	ng/g	---	5	(1)	---	---	---		5	(1)	---			---		
K	ug/g	---	96 ± 16	(6)	97	70 - 120	100	(2)	105	(2)	70	(1)	ICPES	97	(1)	TCGS
La	ug/g	---	1.8 ± 0.3	(7)	1.93	1.38 - 2.10	---		1.8 ± 0.3	(6)	2	(1)	XRF	---		
Li	ug/g	---	0.83	(1)	---	---	---		---		0.83	(1)	ICPES	---		
Lu	ng/g	---	28 ± 9	(4)	27	15 - 36	---		28 ± 9	(4)	---			---		
Mg	ug/g	---	1040 ± 130	(6)	1000	940 - 1300	1000	(2)	1080 ± 190	(3)	1013	(1)	ICPES	---		
Mn	ug/g	21.4 ± 1.5	21.4 ± 1.5	(13)	21.8	19 - 24	21.8 ± 0.7	(4)	20.4 ± 1.3	(6)	23	(1)	XRF	21.4	(1)	ESR
Mn	ug/g	---	---		---	---	---		---		24	(1)	TCGS	---		
Mo	ng/g	---	270	(1)	---	---	---		270	(1)	---			---		
N	%	---	1.16 ± 0.32	(3)	1.0	0.95 - 1.52	---		---		0.95	(1)	IC	1.0	(1)	TCGS
N	%	---	---		---	---	---		---		1.52	(1)	CB	---		
Na	ug/g	2400	2390 ± 200	(12)	2400	2070 - 2800	2900	(2)	2350 ± 80	(7)	2180	(2)	ICPES	2420	(1)	XRF
Na	ug/g	---	---		---	---	---		---		2700	(1)	TCGS	---		
Nb	ug/g	---	< 1		---	---	---		---		< 1		XRF	---		
Nd	ug/g	---	1.38	(2)	---	1.35 - 1.40	---		1.38	(2)	---			---		
Ni	ug/g	1.74 ± 0.10	1.8 ± 0.2	(6)	1.8	1.5 - 2.20	1.8 ± 0.30	(4)	1.78	(2)	3	(1)	XRF	---		
O	%	---	30 ± 8	(3)	33	20.79 - 34.99	---		---		---			29.6 ± 7.7	(3)	14NAA
P	ug/g	---	61.5	(2)	---	60 - 63	---		---		60	(1)	ICPES	63	(1)	XRF
Pb	ug/g	1.9 ± 0.2	1.9 ± 0.4	(6)	1.9	1.48 - 2.60	1.82 ± 0.20	(5)	---		2.6	(1)	XRF	---		
Pb-210	pCi/g	---	0.0699	(1)	---	---	---		---		---			0.0699	(1)	NM
Pr	ug/g	---	< 1		---	---	---		< 4.3		< 1		XRF	---		
Rb	ug/g	---	0.85 ± 0.10	(3)	0.83	0.76 - 0.95	---		0.85 ± 0.10	(3)	---			---		
S	ug/g	3300 ± 300	3360 ± 245	(8)	3300	2880 - 3640	---		---		2880	(1)	ICPES	3540	(1)	XRF
S	ug/g	---	---		---	---	---		---		3300	(1)	IC	3460 ± 180	(3)	CB
S	ug/g	---	---		---	---	---		---		3200	(1)	TCGS	3540	(1)	IDMS
S-32/34	ratio	---	22.546	(1)	---	---	---		---		---			22.546	(1)	IDMS
S-33/34	ratio	---	0.1778	(1)	---	---	---		---		---			0.1778	(1)	IDMS

TABLE 1635-1: COMPILED DATA FOR NBS SRM 1635 TRACE ELEMENTS IN COAL (cont.)

ELEMENT	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		OTHER METHODS					
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean	(n)	Method	Mean ± SD	(n)	Method
Sb	ng/g	140	150 ± 30	(10)	140	120 - 200	177 ± 40	(3)	144 ± 17	(7)	---			---		
Sc	ng/g	630	630 ± 50	(6)	610	560 - 700	---		630 ± 50	(6)	---			---		
Se	ug/g	0.9 ± 0.3	0.94 ± 0.09	(14)	0.97	0.79 - 1.10	0.92 ± 0.09	(5)	0.95 ± 0.10	(8)	1.2	(1)	XRF	0.9	(1)	AF
Si	ug/g	---	5900 ± 500	(5)	6000	5200 - 6500	6100	(2)	---		6500	(1)	ICPES	5600	(1)	14NAA
Si	ug/g	---	---		---	---	---		---		5200	(1)	TCGS	---		
Sm	ng/g	---	290 ± 40	(7)	270	250 - 340	---		290 ± 40	(6)	250	(1)	TCGS	---		
Sn	ng/g	---	< 600		---	---	---		---		< 600		XRF	---		
Sr	ug/g	---	121 ± 19	(5)	127	90 - 140	---		125 ± 6	(3)	90	(1)	ICPES	140	(1)	XRF
Ta	ng/g	---	45.8 ± 1.7	(4)	45	44 - 48	---		45.8 ± 1.7	(4)	---			---		
Tb	ng/g	---	42	(2)	---	35 - 50	---		42.5	(2)	---			---		
Te	ng/g	---	< 290		---	---	---		< 290		< 600		XRF	---		
Th	ng/g	620 ± 40	610 ± 30	(7)	630	560 - 640	---		610 ± 30	(7)	---			---		
Th-228	pCi/g	---	0.0648	(1)	---	---	---		---		0.0648	(1)	NM	---		
Th-230	pCi/g	---	0.0765	(1)	---	---	---		---		0.0765	(1)	NM	---		
Th-232	pCi/g	---	0.0619	(1)	---	---	---		---		0.0619	(1)	NM	---		
Ti	ug/g	200	202 ± 6	(9)	200	190 - 210	---		207 ± 6	(3)	201	(1)	ICPES	204	(2)	XRF
Ti	ug/g	---	---		---	---	---		---		200	(2)	COLOR	190	(1)	TCGS
Tl	ng/g	---	< 1000		---	---	---		---		< 1000		XRF	---		
Tm	ng/g	---	63	(1)	---	---	---		63	(1)	---			---		
U	ng/g	240 ± 20	250 ± 40	(5)	240	200 - 320	---		250 ± 50	(5)	---			---		
U-234	pCi/g	---	0.0719	(1)	---	---	---		---		0.0719	(1)	NM	---		
U-235	pCi/g	---	0.0049	(1)	---	---	---		---		0.0049	(1)	NM	---		
U-238	pCi/g	---	0.0731	(1)	---	---	---		---		0.0731	(1)	NM	---		
V	ug/g	5.2 ± 0.5	4.5 ± 0.6	(10)	4.5	3.5 - 6.7	5.6 ± 1.4	(5)	4.5 ± 0.3	(6)	4	(1)	XRF	---		
W	ng/g	---	190	(2)	---	173 - 210	---		192	(2)	---			---		
Y	ug/g	---	1.9	(1)	---	---	---		---		1.9	(1)	XRF	---		
Yb	ng/g	---	165 ± 16	(5)	170	140 - 179	---		165 ± 16	(5)	---			---		
Zn	ug/g	4.7 ± 0.5	5.8 ± 1.2	(9)	5.4	4.2 - 7.8	4.8 ± 0.4	(4)	6.8 ± 1.1	(4)	5.6	(1)	XRF	---		
Zr	ug/g	---	16 ± 2	(4)	15.7	15 - 19.4	---		17 ± 2	(3)	15	(1)	XRF	---		

TABLE 1635-2: INDIVIDUAL DATA FOR NBS SRM 1635 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ag (ng/g)				
< 38		L	ITNA	82SUZ 02
< 500			ITNA	86GLA 01
< 2500		L	WXRF	82MIL 01
Al (ug/g)				
2600			ITNA	84CLE 01
2600	100		ICPES	84NAD 01
2700		34	AA	83BET 01
2800	500	34	AA	83BET 01
2900	200		ITNA	86GLA 01
2960	170		ITNA	85GAU 04
3000	300		ITNA	82SUZ 02
3000	300		ITNA	80GER 01
3100	100		ITNA	82HAM 01
3352	25		ICPES	85PEA 01
3400	400	D	TCGS	80GER 01
3400	400	D	TCGS	80AND 01
3400	400		TCGS	79FAI 01
As (ng/g)				
280	20		HAA	82NAD 01
320			FAA	82WIL 01
330			AF	82WIL 01
400		11	HAA	82CRO 03
400		11	HAA	82CRO 03
400	50		ITNA	82SUZ 02
400	100		HAA	85LIN 02
430	40		RTNA	84DEL 01
440	50		RTNA	78GAL 01
510	40		ITNA	85GAU 04
530	50		ITNA	82HAM 01
700		34	WXRF	82MIL 01
700	400		ITNA	80GER 01
ASH (%)				
4.5			UU	85SHI 01
4.8		34	CB	82MIL 01
Au (ng/g)				
< 6			ITNA	86GLA 01
B (ug/g)				
104.5	2.6		TCGS	79FAI 01
105	3	D	TCGS	80GER 01
105	3		TCGS	80AND 01
135	11		ITNA	82SCH 05

Conc	Uncer	Com	Method	Reference
Ba (ug/g)				
47	2		ICPES	84NAD 01
67	20	9	ITNA	82SUZ 02
69	6		ITNA	85GAU 04
70	9		ITNA	80GER 01
72	17	5	ITNA	80TOU 01
74	18		ITNA	84SUZ 02
77	24	9	ITNA	82SUZ 02
81		34	WXRF	82MIL 01
Be (ug/g)				
0.46	0.04	11	AA	82LIN 03
0.49	0.01	11	AA	82LIN 03
0.49	0.05	11	AA	82LIN 03
Bi (ug/g)				
< 1		L	WXRF	82MIL 01
Br (ug/g)				
< 1			ITNA	86GLA 01
0.84	0.14		ITNA	85GAU 04
1.07	0.17		ITNA	82SUZ 02
1.22	0.24		ITNA	84SUZ 02
1.5	0.07		ITNA	82HAM 01
1.6	0.3		ITNA	80GER 01
1.9	0.2	5	ITNA	80TOU 01
3		34	WXRF	82MIL 01
C (%)				
59	3		TCGS	79FAI 01
59	3	D	TCGS	80GER 01
59	3	D	TCGS	80AND 01
66.23	0.06		CB	80SCH 02
Ca (ug/g)				
4800			ITNA	84CLE 01
4900	500		ITNA	82HAM 01
5090	30		ICPES	84NAD 01
5100	500		ITNA	86GLA 01
5300	250		ITNA	85GAU 04
5400	200	D	TCGS	80AND 01
5400	200		TCGS	79FAI 01
5400	200	D	TCGS	80GER 01
5500	400	34	AA	83BET 01
5500	900		ITNA	82SUZ 02
5700		34	AA	83BET 01
5700	700		ITNA	80GER 01
5834.4			ICPES	85PEA 01

TABLE 1635-2: INDIVIDUAL DATA FOR NBS SRM 1635 (cont.)

Conc	Uncer	Com	Method	Reference
Cd (ng/g)				
< 380		L	ITNA	82SUZ 02
< 450			ITNA	84SUZ 02
< 3000		L	WXRF	82MIL 01
29	3		RTNA	78GAL 01
Ce (ug/g)				
3.2	0.3		ITNA	84SUZ 02
3.3	0.2	12	ITNA	82SUZ 02
3.4	0.2	12	ITNA	82SUZ 02
3.4	0.3		ITNA	85GAU 04
3.5	0.5		ITNA	80GER 01
3.6	0.86		ITNA	82HAM 01
8		34	WXRF	82MIL 01
Cl (ug/g)				
26	2	D	TCGS	80GER 01
26	2	D	TCGS	80AND 01
26	2		TCGS	79FAI 01
26	4		ITNA	80GER 01
27	6		ITNA	85GAU 04
28	2		IC	83NAD 01
36		34	WXRF	82MIL 01
Co (ng/g)				
590	60		ITNA	80GER 01
600	150	34	FAA	83BET 01
610	180		ITNA	84SUZ 02
620		34	FAA	83BET 01
620	60		ITNA	82SUZ 02
630	40		ITNA	85GAU 04
630	50		ITNA	86GLA 01
640			ITNA	84CLE 01
650	70		ITNA	82HAM 01
700		34	WXRF	82MIL 01
Cr (ug/g)				
1.9			ITNA	84CLE 01
1.9	0.2	11	AA	82LIN 03
2		34	WXRF	82MIL 01
2	0.3		ITNA	82HAM 01
2.3	0.2		ITNA	80GER 01
2.4	0.1		ITNA	84SUZ 02
2.48	0.08		RTNA	78GAL 01
2.5	0.2	12	ITNA	82SUZ 02

Conc	Uncer	Com	Method	Reference
Cr (ug/g) cont.				
2.55	0.17		ITNA	85GAU 04
2.6		34	FAA	83BET 01
2.6	0.3	12	ITNA	82SUZ 02
2.9	0.6	34	FAA	83BET 01
3.5	0.9	11	AA	82LIN 03
4	1		ITNA	86GLA 01
Cs (ng/g)				
< 500		L	WXRF	82MIL 01
< 2100			ITNA	84SUZ 02
46	5		ITNA	80GER 01
53	6		ITNA	82SUZ 02
60	10		ITNA	85GAU 04
Cu (ug/g)				
3		34	WXRF	82MIL 01
3.56	0.18		RTNA	78GAL 01
3.56	0.18		RTNA	84DEL 01
3.6		34	FAA	83BET 01
3.6	0.2	11	AA	82LIN 03
3.6	1	34	FAA	83BET 01
3.7	0.1	11	AA	82LIN 03
14	3		ICPES	84NAD 01
Dy (ng/g)				
< 600			ITNA	86GLA 01
< 740		L	ITNA	82SUZ 02
< 2000		L	WXRF	82MIL 01
310	40		ITNA	80GER 01
350	40		ITNA	84SUZ 02
Er (ng/g)				
< 2000		L	WXRF	82MIL 01
Eu (ng/g)				
< 100			ITNA	86GLA 01
59	2		ITNA	82SUZ 02
61	5		ITNA	84SUZ 02
61	7		ITNA	80GER 01
66	6		ITNA	85GAU 04
F (ug/g)				
20			ISE	83KNA 01
63	4		ISE	83BET 02
77	1		IC	83NAD 01

TABLE 1635-2: INDIVIDUAL DATA FOR NBS SRM 1635 (cont.)

Conc	Uncer	Com	Method	Reference
Fe (ug/g)				
1340	30		ICPES	84NAD 01
1900			ITNA	84CLE 01
2180	170		ITNA	84SUZ 02
2200	100		TCGS	79FAI 01
2200	100	D	TCGS	80AND 01
2200	100	D	TCGS	80GER 01
2200	200		ITNA	82HAM 01
2300		34	AA	83BET 01
2300	200		ITNA	86GLA 01
2300	200		ITNA	80GER 01
2300	600	34	AA	83BET 01
2320	70		ITNA	85GAU 04
2330	240	12	ITNA	82SUZ 02
2340	140	12	ITNA	82SUZ 02
2380			ICPES	85PEA 01
Ga (ug/g)				
<	2	L	ITNA	82SUZ 02
<	7		ITNA	86GLA 01
1.1		34	WXRF	82MIL 01
Gd (ng/g)				
<	1500	L	WXRF	82MIL 01
230	10		TCGS	79FAI 01
350	20		TCGS	80AND 01
440	60		ITNA	84SUZ 02
Ge (ug/g)				
0.5		34	WXRF	82MIL 01
H (%)				
3.96	0.03	D	TCGS	80AND 01
3.96	0.03	D	TCGS	80GER 01
3.96	0.03		TCGS	79FAI 01
4.18	0.14		CB	80SCH 02
H2O- (%)				
14			FD	80KHA 02
16.8			GRAV	85LIN 02

Conc	Uncer	Com	Method	Reference
Hf (ng/g)				
240	40	9	ITNA	82SUZ 02
270	40		ITNA	80GER 01
290	20	9	ITNA	82SUZ 02
290	30		ITNA	85GAU 04
300	30		ITNA	84SUZ 02
340	40		ITNA	86GLA 01
Hg (ng/g)				
<	48		ITNA	84SUZ 02
<	56	L	ITNA	82SUZ 02
<	1500	L	WXRF	82MIL 01
5	15		CVAA	82DOO 01
35	11	12	ITNA	82SUZ 02
Ho (ng/g)				
<	1500	L	WXRF	82MIL 01
49	20		ITNA	84SUZ 02
I (ng/g)				
<	750		ITNA	84SUZ 02
<	860	L	ITNA	82SUZ 02
<	1300	L	WXRF	82MIL 01
600	300		ITNA	80GER 01
In (ng/g)				
<	31	L	ITNA	82SUZ 02
<	1000	L	WXRF	82MIL 01
5	2		ITNA	80GER 01
K (ug/g)				
70			ICPES	84NAD 01
90	90		ITNA	82SUZ 02
97	6	D	TCGS	80GER 01
97	6		TCGS	79FAI 01
97	6	D	TCGS	80AND 01
100		34	AA	83BET 01
100	20	34	AA	83BET 01
120	10		ITNA	80GER 01
199.2	39.84		ICPES	85PEA 01

TABLE 1635-2: INDIVIDUAL DATA FOR NBS SRM 1635 (cont.)

Conc	Uncer	Com	Method	Reference
La (ug/g)				
1.38	0.07		ITNA	82SUZ 02
1.42	0.08		ITNA	84SUZ 02
1.78	0.09		ITNA	86GLA 01
1.93	0.08		ITNA	85GAU 04
2		34	WXRF	82MIL 01
2	0.25		ITNA	82HAM 01
2.1	0.3		ITNA	80GER 01
Li (ug/g)				
0.83	0.28		ICPES	84NAD 01
Lu (ng/g)				
<	30		ITNA	86GLA 01
15	3		ITNA	85GAU 04
27	4		ITNA	80GER 01
33	14		ITNA	84SUZ 02
36	7		ITNA	82SUZ 02
Mg (ug/g)				
600			ICPES	84NAD 01
940	190		ITNA	82SUZ 02
1000		34	AA	83BET 01
1000	100	34	AA	83BET 01
1000	200		ITNA	80GER 01
1013.04			ICPES	85PEA 01
1300	200		ITNA	82HAM 01
Mn (ug/g)				
15.7	0.8		ICPES	84NAD 01
19			ITNA	84CLE 01
19	1.2		ITNA	82SUZ 02
20.2	0.3		ITNA	86GLA 01
20.4	1.5		ITNA	85GAU 04
20.8	2.1	34	FAA	83BET 01
21.4			ESR	85SHI 01
21.8	2.1		ITNA	82HAM 01
22	3		ITNA	80GER 01
22.1		34	FAA	83BET 01
22.2	0.1	11	AA	82LIN 03
22.3	0.8	11	AA	82LIN 03
23		34	WXRF	82MIL 01
24	7	D	TCGS	80GER 01
24	7	D	TCGS	80AND 01
24	7		TCGS	79FAI 01
345.6			ICPES	85PEA 01

Conc	Uncer	Com	Method	Reference
Mo (ng/g)				
<	1000	L	WXRF	82MIL 01
<	5000		ITNA	86GLA 01
270	100		ITNA	82SUZ 02
N (%)				
0.95	0.01		IC	83NAD 01
1	0.1	D	TCGS	80GER 01
1	0.1	D	TCGS	80AND 01
1	0.1		TCGS	79FAI 01
1.52	0.02		CB	80SCH 02
Na (ug/g)				
2070	30		ICPES	84NAD 01
2200	160		ITNA	82SCH 05
2279.424			ICPES	85PEA 01
2300	70		ITNA	86GLA 01
2320			ITNA	84CLE 01
2400	70		ITNA	82HAM 01
2400	200		ITNA	80GER 01
2400	200		ITNA	82SUZ 02
2410	50		ITNA	85GAU 04
2420		34	WXRF	82MIL 01
2700	50	D	TCGS	80AND 01
2700	50	D	TCGS	80GER 01
2700	50		TCGS	79FAI 01
2800		34	AA	83BET 01
3000	300	34	AA	83BET 01
Nb (ug/g)				
<	1	L	WXRF	82MIL 01
Nd (ug/g)				
<	1	L	WXRF	82MIL 01
<	1.6	12	ITNA	82SUZ 02
<	1.8	12	ITNA	82SUZ 02
1.35	0.15		ITNA	84SUZ 02
1.4	0.2		ITNA	80GER 01
Ni (ug/g)				
1.5	0.1	11	AA	82LIN 03
1.72	0.32	12	ITNA	82SUZ 02
1.78		34	FAA	83BET 01
1.8	0.5	34	FAA	83BET 01
1.83	0.23	12	ITNA	82SUZ 02
2.2	0.2	11	AA	82LIN 03
3		34	WXRF	82MIL 01

TABLE 1635-2: INDIVIDUAL DATA FOR NBS SRM 1635 (cont.)

Conc	Uncer	Com	Method	Reference
O (%)				
20.79	0.19	34	14NAA	80KHA 02
33	1.6		14NAA	80NAD 01
34.99	0.32	35	14NAA	80KHA 02
P (ug/g)				
60	9		ICPES	84NAD 01
63		34	WXRF	82MIL 01
251	21		ICPES	85PEA 01
Pb (ug/g)				
1.48	0.21		HAA	82NAD 01
1.8	0.1	11	AA	82LIN 03
1.9	0.3	11	AA	82LIN 03
1.9	0.6	34	FAA	83BET 01
2		34	FAA	83BET 01
2.6		34	WXRF	82MIL 01
Pb-210 (pCi/g)				
0.0699	0.0013		NM	80CAS 01
0.07	0.001	D	NM	81CAS 01
Pr (ug/g)				
<	1	L	WXRF	82MIL 01
<	4.3	12	ITNA	82SUZ 02
<	4.4	12	ITNA	82SUZ 02
Rb (ug/g)				
<	0.3	L	WXRF	82MIL 01
0.76	0.09	12	ITNA	82SUZ 02
0.83	0.08	12	ITNA	82SUZ 02
0.95	0.37		ITNA	85GAU 04
S (ug/g)				
2880	40		ICPES	85PEA 01
3200	100	D	TCGS	80AND 01
3200	100	D	TCGS	80GER 01
3200	100		TCGS	79FAI 01
3280	90		CB	85GLA 03
3300	100		IC	83NAD 01
3470	60		CB	86GAU 01
3540	40		XRF	84WEB 01
3540	140		IDMS	84KEL 01
3640	50		CB	84GLA 11

Conc	Uncer	Com	Method	Reference
S-32/34 (ratio)				
22.546			IDMS	84KEL 01
S-33/34 (ratio)				
0.1778			IDMS	84KEL 01
Sb (ng/g)				
< 200			ITNA	86GLA 01
< 1000		L	WXRF	82MIL 01
120	10		RTNA	78GAL 01
130			ITNA	84CLE 01
130	10		HAA	82NAD 01
140	10		ITNA	80GER 01
140	10		ITNA	82HAM 01
147	21		ITNA	85GAU 04
160	30		ITNA	82SUZ 02
170	40	5	ITNA	80TOU 01
200		11	HAA	82CRO 03
200		11	HAA	82CRO 03
Sc (ng/g)				
< 1200		L	ITNA	80TOU 01
560	50		ITNA	82SUZ 02
610	14		ITNA	85GAU 04
610	20		ITNA	82HAM 01
610	40		ITNA	86GLA 01
690	70		ITNA	80GER 01
700	30	5	ITNA	80TOU 01
900		34	WXRF	82MIL 01
Se (ug/g)				
0.79	0.07		HAA	82NAD 01
0.8	0.2		RTNA	80KNA 01
0.82	0.04		RTNA	78GAL 01
0.9			AF	82WIL 01
0.9			FAA	82WIL 01
0.93	0.07	7	HAA	84IMA 01
0.93	0.07	D	HAA	84IMA 03
0.94	0.11	9	ITNA	82SUZ 02
0.97	0.03		ITNA	84SUZ 02
0.98	0.09		ITNA	80GER 01
0.99	0.11	9	ITNA	82SUZ 02
1.0			ITNA	84CLE 01
1.0	0.1		HAA	85LIN 01
1.0	0.1		HAA	85LIN 02
1.1	0.1		RTNA	84DEL 01
1.2		34	WXRF	82MIL 01

TABLE 1635-2: INDIVIDUAL DATA FOR NBS SRM 1635 (cont.)

Conc	Uncer	Com	Method	Reference
Si (ug/g)				
5200	200		TCGS	79FAI 01
5200	200	D	TCGS	80AND 01
5200	200	D	TCGS	80GER 01
5600	700		14NAA	80GER 01
6000	1000	34	AA	83BET 01
6200		34	AA	83BET 01
6500	600		ICPES	84NAD 01
7600	22		ICPES	85PEA 01
Sm (ng/g)				
250	10	D	TCGS	80GER 01
250	10	D	TCGS	80AND 01
250	10		TCGS	79FAI 01
260	10		ITNA	85GAU 04
260	20		ITNA	82HAM 01
270	10	5	ITNA	80TOU 01
300	40		ITNA	80GER 01
330	60		ITNA	84SUZ 02
340	30		ITNA	82SUZ 02
Sn (ug/g)				
<	0.6	L	WXRF	82MIL 01
Sr (ug/g)				
90	1		ICPES	84NAD 01
118	8	12	ITNA	82SUZ 02
127	24	12	ITNA	82SUZ 02
129	14		ITNA	80GER 01
140		34	WXRF	82MIL 01
Ta (ng/g)				
<	300		ITNA	86GLA 01
<	1000	L	WXRF	82MIL 01
44	6		ITNA	82SUZ 02
45	9		ITNA	84SUZ 02
46	9		ITNA	80GER 01
48	9		ITNA	85GAU 04
Tb (ng/g)				
<	100		ITNA	86GLA 01
<	2000	L	WXRF	82MIL 01
35	3		ITNA	82SUZ 02
50	4		ITNA	84SUZ 02

Conc	Uncer	Com	Method	Reference
Te (ng/g)				
<	290	L	ITNA	82SUZ 02
<	360		ITNA	84SUZ 02
<	600	34	WXRF	82MIL 01
Th (ng/g)				
560	30		ITNA	84SUZ 02
580	40	12	ITNA	82SUZ 02
610	70	12	ITNA	82SUZ 02
630	25		ITNA	85GAU 04
630	60		ITNA	86GLA 01
640	50	5	ITNA	80TOU 01
640	60		ITNA	80GER 01
Th-228 (fCi/g)				
64.8	4.1		NM	80CAS 01
64.8	4.1	D	NM	81CAS 01
Th-23 (fCi/g)				
76.5	7.9		NM	80CAS 01
76.5	7.9	D	NM	81CAS 01
Th-232 (fCi/g)				
61.9	7.7	D	NM	81CAS 01
61.9	7.7		NM	80CAS 01
Ti (ug/g)				
124	2		ICPES	84NAD 01
190	20	D	TCGS	80GER 01
190	20	D	TCGS	80AND 01
190	20		TCGS	79FAI 01
200		34	COLOR	83BET 01
200		34	WXRF	82MIL 01
200	20	34	COLOR	83BET 01
200	40		ITNA	82HAM 01
201			ICPES	85PEA 01
207			WXRF	83GAR 01
210	20		ITNA	80GER 01
210	50		ITNA	82SUZ 02
Tl (ug/g)				
<	1	L	WXRF	82MIL 01
Tm (ng/g)				
<	1000	L	WXRF	82MIL 01
63	10		ITNA	84SUZ 02

TABLE 1635-2: INDIVIDUAL DATA FOR NBS SRM 1635 (cont.)

Conc	Uncer	Com	Method	Reference
U (ng/g)				
200	50		ITNA	80GER 01
220	20		ITNA	84SUZ 02
240	30		ITNA	82SUZ 02
250	10		DNA	86GLA 01
320	40	5	ITNA	80TOU 01
U-234 (fCi/g)				
71.9	4.4		NM	80CAS 01
71.9	4.4	D	NM	81CAS 01
U-235 (fCi/g)				
4.9	0.3	D	NM	81CAS 01
4.9	0.3		NM	80CAS 01
U-238 (pCi/g)				
0.0731	0.0046		NM	80CAS 01
0.0731	0.0046	D	NM	81CAS 01
V (ug/g)				
3.5	0.3	11	AA	82LIN 03
4		34	WXRF	82MIL 01
4.1			ITNA	84CLE 01
4.3	0.2		ITNA	82HAM 01
4.3	0.3		ITNA	82SUZ 02
4.5	0.05		ITNA	80GER 01
4.7	0.3		ITNA	85GAU 04
5	2		ITNA	86GLA 01
5.4		34	FAA	83BET 01
5.4	0.5	34	FAA	83BET 01
6.7	0.1	11	AA	82LIN 03
7.2	0.1	11	AA	82LIN 03
W (ng/g)				
< 900			ITNA	86GLA 01
< 1000		L	WXRF	82MIL 01
173	51		ITNA	82SUZ 02
210	50		ITNA	84SUZ 02
Y (ug/g)				
1.9		34	WXRF	82MIL 01

Conc	Uncer	Com	Method	Reference
Yb (ng/g)				
140	20		ITNA	80GER 01
159	3		ITNA	85GAU 04
170	60	5	ITNA	80TOU 01
175	12		ITNA	82SUZ 02
179	16		ITNA	84SUZ 02
Zn (ug/g)				
4.2	1	34	FAA	83BET 01
4.9		34	FAA	83BET 01
5	0.1	11	AA	82LIN 03
5	0.4	11	AA	82LIN 03
5.4	0.76		ITNA	82HAM 01
5.6		34	WXRF	82MIL 01
6.6	1.4	12	ITNA	82SUZ 02
7.5	2.2		ITNA	80GER 01
7.8	1.2	12	ITNA	82SUZ 02
18	3		ICPES	84NAD 01
Zr (ug/g)				
< 60			ITNA	86GLA 01
15		34	WXRF	82MIL 01
15.7	4.3	12	ITNA	82SUZ 02
16	3		ITNA	80GER 01
19.4	3.3	12	ITNA	82SUZ 02

TABLE 1641-1: COMPILED DATA FOR NBS SRM 1641 MERCURY IN WATER
(revised 3/1/86)

ELE	UNITS	NBS Mean ± SD	CONSENSUS Mean (n)	METHOD
Hg	ug/mL	1.49 ± 0.05	1.47 (1)	AA

TABLE 1641-2: INDIVIDUAL DATA FOR NBS SRM 1641 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Hg (mg/L)				
1.47	0.17		CVAA	82GLA 02

TABLE 1641A-1: COMPILED DATA FOR NBS SRM 1641A MERCURY IN WATER
(revised 3/1/86)

ELE	UNITS	NBS Mean ± SD
Hg	ug/mL	1.1 ± 0.05

TABLE 1641B-1: COMPILED DATA FOR NBS SRM 1641B MERCURY IN WATER
(revised 3/1/86)

ELE	UNITS	NBS Mean ± SD	CONSENSUS Mean (n)	METHOD
Hg	ug/mL	1.52 ± 0.04	1.52 (1)	NAA

TABLE 1641B-2: INDIVIDUAL DATA FOR NBS SRM 1641B (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Hg (ug/g)				
1.52	0.05		RTNA	85FEN 01

TABLE 1642-1: COMPILED DATA FOR NBS SRM 1642 MERCURY IN WATER
(revised 3/1/86)

ELE	UNITS	NBS Mean ± SD
Hg	ng/mL	1.18 ± 0.05

TABLE 1642A-1: COMPILED DATA FOR NBS SRM 1642A MERCURY IN WATER
(revised 3/1/86)

ELE	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	METHOD
Hg	ng/mL	1.1 ± 0.06	1.22 ± 0.07 (4)	1.19	1.14 - 1.30	AA

TABLE 1642A-2: INDIVIDUAL DATA FOR NBS SRM 1642A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Hg (ug/L)				
1.14	0.05		CVAA	85GAU 04
1.19	0.02		CVAA	81KAH 01
1.24			CVAA	84GLA 11
1.30			CVAA	82GLA 02

TABLE 1642B-1: COMPILED DATA FOR NBS SRM 1642B MERCURY IN WATER
(revised 3/1/86)

ELE	UNITS	NBS Mean ± SD	CONSENSUS Mean (n)	RANGE	METHOD
Hg	ng/mL	1.49 ± 0.06	1.46 (2)	1.45 - 1.48	AA

TABLE 1642B-2: INDIVIDUAL DATA FOR NBS SRM 1642B (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Hg (ug/L)				
1.45	0.13		CVAA	86GAU 01
1.48	0.06		CVAA	85GAU 04

TABLE 1643-1: COMPILED DATA FOR NBS SRM 1643 TRACE ELEMENTS IN WATER (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		ICPES		OTHER METHODS					
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean	(n)	Mean	(n)	Method	Mean	(n)	Method
Al	ng/g	77 ± 1	78 ± 6	(6)	77.1	69 - 83	79 ± 7	(3)	69	(1)	77.1	(1)	AE-AF	83	(1)	DCPES
As	ng/g	76 ± 1	75 ± 3	(5)	75.7	71 - 79	75.7	(1)	72	(2)	78.5	(2)	ASV	---		
Au	ng/g	10	---		---	---	---		---		---			---		
Ba	ng/g	18	18.9 ± 1.5	(6)	18	17.3 - 21.5	19.0 ± 1.7	(4)	---		18.5	(2)	AE-AF	---		
Be	ng/g	19 ± 1	20	(2)	---	18.8 - 21.3	18.8	(1)	---		21.3	(1)	AE-AF	---		
Ca	ug/g	27	23.9	(1)	---	---	---		---		23.9	(1)	NAA	---		
Cd	ng/g	8 ± 1	9.5 ± 2.4	(5)	9	7.1 - 12	8.9 ± 2.7	(3)	---		9	(1)	XRF	12	(1)	FE
Co	ng/g	17 ± 1	20 ± 2	(8)	20	16 - 23	18.4 ± 1.7	(5)	22	(1)	21.5	(2)	XRF	---		
Cr	ng/g	15 ± 1	17.3 ± 1.8	(6)	16	16 - 20	17.6 ± 1.8	(5)	16	(1)	---			---		
Cu	ng/g	16 ± 1	15.7 ± 0.9	(9)	16	14 - 17	15.3 ± 0.8	(6)	19	(1)	16.5	(2)	XRF	16.2	(1)	AE-AF
Fe	ng/g	75 ± 1	78 ± 3	(10)	78	72 - 82	76 ± 3	(5)	81	(1)	82	(2)	XRF	76	(1)	DCPES
Fe	ng/g	---	---		---	---	---		---		78	(1)	FAF	---		
Hg	ng/g	2	< 8		---	---	---		---		< 8		XRF	---		
K	ug/g	2	---		---	---	---		---		---			---		
Mg	ug/g	7	5.7	(1)	---	---	---		---		5.7	(1)	NAA	---		
Mn	ng/g	29 ± 1	31 ± 4	(15)	29	25 - 39	29 ± 3	(8)	30	(1)	26	(1)	XRF	20	(1)	NAA
Mn	ng/g	---	---		---	---	---		---		35.5	(2)	FE	---		
Mn	ng/g	---	---		---	---	---		---		29	(1)	DCPES	28	(1)	AE-AF
Mo	ng/g	105 ± 3	105 ± 8	(8)	104	93 - 118	106 ± 8	(6)	93	(1)	110	(1)	AE-AF	---		
Na	ug/g	10	8.8	(1)	---	---	---		---		8.8	(1)	NAA	---		
Ni	ng/g	49 ± 1	49 ± 2	(12)	50	44 - 52	48 ± 3	(7)	48	(1)	53	(2)	XRF	48	(1)	DCPES
Ni	ng/g	---	---		---	---	---		---		51.3	(1)	AE-AF	50	(1)	FE
Pb	ng/g	20 ± 1	22 ± 4	(4)	21	18 - 27	19.5	(2)	---		25	(2)	XRF	---		
Se	ng/g	12 ± 1	11.2 ± 1.0	(3)	11.6	10 - 12	12	(1)	10	(2)	---			---		
Sn	ng/g	---	< 20		---	---	---		---		< 20		XRF	---		
Sr	ng/g	212 ± 4	203	(1)	---	---	---		203	(1)	---			---		
V	ng/g	50 ± 1	48 ± 6	(7)	50	40 - 55	50 ± 5	(5)	---		40	(1)	NAA	50	(1)	DCPES
Zn	ng/g	65 ± 3	62 ± 4	(9)	62	55 - 69	62 ± 5	(5)	67	(1)	62	(2)	XRF	61	(1)	DCPES

TABLE 1643-2: INDIVIDUAL DATA FOR NBS SRM 1643 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Al (ng/g)				
50			ITNA	81HAB 01
69	3		ICPES	85FLO 01
71	8		FAA	84HAR 02
77.1	5.7		AE-AF	78EPS 01
82.1	1.4		FAA	78EPS 01
83			FAA	84SLA 02
83	2	D	DCPES	81REE 01
83	2		DCPES	79REE 01
As (ng/g)				
71			ICPES	82NYG 01
73	1		ICPES	83PRU 01
75.7	1.3		HAA	80YAN 01
78		13	ASV	82LEU 01
79		13	ASV	82LEU 01
Ba (ng/g)				
17.3	1.8		AE-AF	79EPS 03
18		14	FAA	79EPS 03
18			FAA	78BEA 01
18.7	0.7		FAA	78EPS 01
19.7	1		AE-AF	78EPS 01
21.5	1.2	14	FAA	79EPS 03
42	1		ICPES	85FLO 01
Be (ng/g)				
18.8	0.4		FAA	78EPS 01
21.3	5.5		AE-AF	78EPS 01
Ca (ug/g)				
23.9			ITNA	81HAB 01
Cd (ng/g)				
7.1		13	FAA	84SLA 02
7.5		13	FAA	84SLA 02
9	1		EXRF	84KNA 01
12	2		FE	82JEN 05
12	2		FAA	82JEN 05

Conc	Uncer	Com	Method	Reference
Co (ng/g)				
16	3	14	FAA	84HAR 01
18	3	14	FAA	84HAR 01
18	6	14	FAA	84HAR 01
20	2		XRF	80BER 02
20	5		FAA	84HAR 02
20	5	14	FAA	84HAR 01
22	2		ICPES	85FLO 01
23	2		EXRF	84KNA 01
Cr (ng/g)				
16	1		ICPES	85FLO 01
16	2	14	FAA	84HAR 01
16	2	14	FAA	84HAR 01
17	2	14	FAA	84HAR 01
19	5	14	FAA	84HAR 01
20	5		FAA	84HAR 02
Cu (ng/g)				
14	0.3		FAA	78EPS 01
15	1		FAA	84HAR 02
15	2	14	FAA	84HAR 01
16	2	14	FAA	84HAR 01
16	2	14	FAA	84HAR 01
16	2	14	FAA	84HAR 01
16	3		EXRF	84KNA 01
16.2	1.8		AE-AF	78EPS 01
17	1		XRF	80BER 02
19	1		ICPES	85FLO 01
Fe (ng/g)				
72	3	14	FAA	84HAR 01
74	3	14	FAA	84HAR 01
76	2	D	DCPES	81REE 01
76	2		DCPES	79REE 01
77	7		FAA	84HAR 02
78			FAF	80EPS 04
78	3	14	FAA	84HAR 01
78	5	14	FAA	84HAR 01
81	6		ICPES	85FLO 01
82	3		XRF	80BER 02
82	5		EXRF	84KNA 01
Hg (ng/g)				
<	8	L	XRF	80BER 02

TABLE 1643-2: INDIVIDUAL DATA FOR NBS SRM 1643 (cont.)

Conc	Uncer	Com	Method	Reference
Mg (ug/g)				
5.7			ITNA	81HAB 01
Mn (ng/g)				
20			ITNA	81HAB 01
25			FAA	84SLA 02
26	3		XRF	80BER 02
27.5	0.7		FAA	78EPS 01
28	2	14	FAA	84HAR 01
28	2.5		AE-AF	78EPS 01
29	3		DCPES	79REE 01
29	3	D	DCPES	81REE 01
29	7	14	FAA	84HAR 01
30	1		ICPES	85FLO 01
30	5	14	FAA	84HAR 01
31	2		FAA	84HAR 02
31	2	14	FAA	84HAR 01
34	1		FAA	82JEN 05
35	1		FE	82JEN 05
36	1		FE	82JEN 05
39	1		FAA	82JEN 05
Mo (ng/g)				
93	4		ICPES	85FLO 01
95	17	14	FAA	84HAR 01
102	18	14	FAA	84HAR 01
104	3		FAA	78EPS 01
105	27		FAA	84HAR 02
110	5		AE-AF	78EPS 01
113	18	14	FAA	84HAR 01
118	25	14	FAA	84HAR 01
Na (ug/g)				
8.8			ITNA	81HAB 01
Ni (ng/g)				
44	5	14	FAA	84HAR 01
45	4		FAA	82JEN 05
48	3		ICPES	85FLO 01
48	4	D	DCPES	81REE 01
48	4		DCPES	79REE 01
48	14		FAA	84HAR 02
49.8	0.8		FAA	78EPS 01
50	3		FE	82JEN 05
50	3		XRF	80BER 02
50	5	14	FAA	84HAR 01
51	3	14	FAA	84HAR 01
51.3	4.2		AE-AF	78EPS 01
52	6	14	FAA	84HAR 01
56	2		EXRF	84KNA 01
Pb (ng/g)				
18			FAA	84SLA 02
21	7		FAA	84HAR 02
23	2		XRF	80BER 02
27	9		EXRF	84KNA 01
Se (ng/g)				
10			ICPES	82NYG 01
11.6	0.3		ICPES	83PRU 01
12	1		HAA	81COX 01
Sn (ng/g)				
<	20	L	XRF	80BER 02
Sr (ng/g)				
203	16		ICPES	85FLO 01
V (ng/g)				
40			ITNA	81HAB 01
41	15		FAA	84HAR 02
50	2	D	DCPES	81REE 01
50	2		DCPES	79REE 01
50	7	14	FAA	84HAR 01
51	7	14	FAA	84HAR 01
52	7	14	FAA	84HAR 01
55	6	14	FAA	84HAR 01
Zn (ng/g)				
55	7	14	FAA	84HAR 01
61	1	D	DCPES	81REE 01
61	1		DCPES	79REE 01
61	12	14	FAA	84HAR 01
61	17		EXRF	84KNA 01
62	5	14	FAA	84HAR 01
62	7	14	FAA	84HAR 01
63	3		XRF	80BER 02
67	3		ICPES	85FLO 01
69	12		FAA	84HAR 02

TABLE 1643A-1: COMPILED DATA FOR NBS SRM 1643A TRACE ELEMENTS IN WATER (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		ICPES		OTHER METHODS					
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method	Mean ± SD	(n)	Method
Ag	ng/g	2.8 ± 0.3	3.3 ± 0.4	(9)	3.5	2.7 - 3.9	3.1 ± 0.5	(5)	3.4	(1)	3.6 ± 0.2	(3)	ICPMS	---		
Al	ng/g	---	125	(2)	---	121 - 129	---		---		129	(1)	NAA	---		
As	ng/g	76 ± 7	75 ± 3	(11)	75.1	70 - 80	75 ± 4	(6)	74.5	(2)	74	(1)	ICPMS	78	(2)	NAA
Au	ng/g	15	15	(1)	---	---	---		15	(1)	---			---		
Ba	ng/g	46 ± 2	47 ± 4	(8)	45.7	41 - 54	47 ± 2	(4)	46	(1)	47 ± 6	(3)	ICPMS	---		
Be	ng/g	19 ± 2	20 ± 2	(5)	19	18.6 - 24	---		18.9 ± 0.2	(4)	24	(1)	ICPMS	---		
Ca	ug/g	27	27.3 ± 0.5	(7)	27.4	26.5 - 28	28.0 ± 1.4	(4)	27.3 ± 0.7	(4)	---			---		
Cd	ng/g	10 ± 1	10.7 ± 1.2	(22)	10.6	8.4 - 13	11.0 ± 1.5	(8)	10.8 ± 1.0	(6)	9.8 ± 0.4	(3)	NAA	10.1	(1)	FAAC
Cd	ng/g	---	---		---	---	---		---		11.3 ± 1.5	(3)	ICPMS	---		
Cd	ng/g	---	---		---	---	---		---		10.6	(1)	AAC	---		
Cl	ng/g	---	< 300		---	---	---		---		< 300		NAA	---		
Co	ng/g	19 ± 2	20.1 ± 1.3	(13)	20	18.3 - 22	21.2 ± 0.8	(5)	21 ± 2	(5)	19 ± 0.5	(4)	NAA	---		
Cr	ng/g	17 ± 2	17.9 ± 1.4	(24)	17.6	16 - 20	18.2 ± 1.4	(11)	18 ± 2	(6)	17.8 ± 1.8	(3)	XRF	17.5	(2)	ICPMS
Cr	ng/g	---	---		---	---	---		---		16.2 ± 0.3	(3)	NAA	---		
Cr(III)	ng/g	---	14.9	(1)	---	---	---		14.9	(1)	---			---		
Cr(VI)	ng/g	---	1.96	(1)	---	---	---		1.96	(1)	---			---		
Cu	ng/g	18 ± 2	18.3 ± 1.4	(23)	18	15.5 - 21	17.4 ± 1.1	(12)	19.1 ± 1.1	(6)	19 ± 0.2	(4)	NAA	21	(1)	ICPMS
Fe	ng/g	88 ± 4	87 ± 5	(18)	87	78 - 100	86 ± 6	(11)	87 ± 4	(5)	88	(2)	NAA	---		
Hg	ng/g	< 0.2	0.2	(1)	---	---	---		---		0.2	(1)	ICPMS	---		
K	ug/g	2	1.7 ± 0.2	(5)	1.7	1.5 - 2.1	1.65 ± 0.16	(3)	1.9	(2)	---			---		
Li	ng/g	---	7	(1)	---	---	---		---		7.0	(1)	ICPMS	---		
Mg	ug/g	8	7.80 ± 0.06	(7)	7.8	7.7 - 7.9	7.80 ± 0.08	(4)	8.1 ± 0.6	(4)	---			---		
Mn	ng/g	31 ± 2	31.6 ± 1.4	(18)	32	28 - 34	32.1 ± 1.2	(9)	31 ± 2	(6)	29 ± 4	(4)	NAA	---		
Mo	ng/g	95 ± 6	100 ± 4	(14)	97	94 - 108	98 ± 5	(5)	100 ± 5	(4)	100 ± 3	(4)	NAA	108	(1)	ICPMS
NO3	ug/g	---	1.0	(1)	---	---	---		---		1.0	(1)	ISE	---		
Na	ug/g	9	9.3 ± 0.4	(6)	9.2	8.9 - 10	9.1 ± 0.3	(4)	10.4 ± 1.4	(3)	---			---		
Ni	ng/g	55 ± 3	54 ± 4	(19)	55	47 - 62	54 ± 2	(8)	55 ± 6	(6)	51.5	(2)	ICPMS	56	(2)	NAA
Pb	ng/g	27 ± 1	27.3 ± 1.5	(15)	27	24.1 - 30	27.5 ± 0.9	(8)	26	(2)	27.4	(1)	AAC	---		
Pb	ng/g	---	---		---	---	---		---		28.3	(2)	ICPMS	---		
Pb	ng/g	---	---		---	---	---		---		26.1	(2)	FAAC	---		
Se	ng/g	11 ± 1	11.2 ± 0.8	(6)	11	10 - 12	11.1 ± 0.7	(5)	---		12	(1)	ICPMS	---		
Sr	ng/g	239 ± 5	227 ± 16	(9)	232	200 - 246	236	(1)	239 ± 6	(4)	213 ± 12	(4)	ICPMS	---		
U	ng/g	---	< 0.01		---	---	---		---		< 0.01		NAA	---		
V	ng/g	53 ± 3	53 ± 2	(13)	52	50 - 56	54.2 ± 1.7	(4)	52.0 ± 1.8	(4)	51.8 ± 1.2	(4)	NAA	50	(2)	ICPMS
Zn	ng/g	72 ± 4	68 ± 6	(23)	68	57 - 77	66 ± 6	(11)	68 ± 4	(6)	69.5 ± 2.6	(3)	NAA	69 ± 8	(3)	ICPMS

TABLE 1643A-2: INDIVIDUAL DATA FOR NBS SRM 1643A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ag (ng/g)				
2.7			FAA	82GLA 02
2.8	0.1		FAA	84GLA 02
2.8	0.4		FAA	85GAU 04
3.4	0.5		ICPES	82DEM 01
3.5			ICPMS	85DAT 01
3.5	1	6	ICPMS	83DOU 01
3.6	1.1		FAA	84GLA 11
3.8	0.4		FAA	83JEN 01
3.9	1	6	ICPMS	83DOU 01
Al (ng/g)				
57	6		FAA	82JEN 02
121	8		UU	83LIN 01
129	10		RTNA	83GRE 01
As (ng/g)				
<	70		ICPES	85LAN 02
70	4		FAA	84GLA 02
71	5		FAA	84GLA 11
72	62		ICPES	85KIM 01
74			ICPMS	85DAT 01
74	3		HAA	81KAH 01
75.1	0.8		NAA	84FEN 01
76	7		FAA	82GLA 02
77	28		ICPES	85HEE 01
78	6		FAA	85GAU 04
79			FAA	84SLA 02
80	1		ITNA	83JER 01
Au (ng/g)				
15	4		ICPES	85HEE 01
Ba (ng/g)				
41	4	6	ICPMS	83DOU 01
45	6		FAA	84GLA 02
45	10		AA	84GLA 11
45.7			ICPMS	85DAT 01
46	1		ICPES	85HEE 01
48	3		FAA	82GLA 02
49	3		FAA	85GAU 04
54	6	6	ICPMS	83DOU 01

Conc	Uncer	Com	Method	Reference
Be (ng/g)				
18.6	1		ICPES	82DEM 01
19	0.4		ICPES	85HEE 01
19	1	11	ICPES	85NIS 01
19	1	11	ICPES	85NIS 01
24			ICPMS	85DAT 01
Ca (ug/g)				
26.5	0.5	11	ICPES	85NIS 01
26.9	0.8		AA	84GLA 02
27	0.5	11	ICPES	85NIS 01
27.4			AA	84GLA 11
27.5	1.4		AA	85GAU 04
27.6	0.7		ICPES	85LAN 02
28	1		ICPES	85HEE 01
30	4		FAA	82GLA 02
Cd (ng/g)				
5	1		FAA	82JEN 02
8.4	0.8		FAA	85BRE 01
9	1.4		ICPES	85KIM 01
9.3	0.9		FAA	85GAU 04
9.4	1		RTNA	84BEM 01
9.8	1.7		NAA	84FEN 01
10	2	6	ICPMS	83DOU 01
10.1	0.5		RTNA	83GRE 01
10.1	0.8		FAAC	85GAU 04
10.4	0.5		ICPES	82DEM 01
10.6			AAC	86GAU 01
10.6	0.2	11	FAA	85SUB 01
11			ICPMS	85DAT 01
11	0.4		ICPES	85HEE 01
11	1	11	ICPES	85NIS 01
11	1	11	ICPES	85NIS 01
11	2		FAA	84GLA 02
11.4	2.9	11	FAA	85SUB 01
12			FAA	82GLA 02
12.2	1.6		ICPES	85LAN 02
12.5	0.3		FAA	83JEN 01
12.5	1.3		FAA	83JER 01
13	2	6	ICPMS	83DOU 01
Cl (ng/g)				
<	300		ITNA	84GLA 11

TABLE 1643A-2: INDIVIDUAL DATA FOR NBS SRM 1643A (cont.)

Conc	Uncer	Com	Method	Reference
Co (ng/g)				
18.3	1.4		NAA	84FEN 01
18.5	1.8		ICPES	82DEM 01
19	1		RTNA	83GRE 01
19	1		RTNA	82GRE 03
19.5	0.6		RTNA	84BEM 01
20			FAA	84SLA 02
20	2	11	ICPES	85NIS 01
20	2	11	ICPES	85NIS 01
21	3	14	FAA	84HAR 01
21	3	14	FAA	84HAR 01
21.5	2		ICPES	85LAN 02
22	3	14	FAA	84HAR 01
22	3	14	FAA	84HAR 01
24	4		ICPES	85HEE 01
Cr (ng/g)				
14.2	3.4		ICPES	85LAN 02
16	2		RTNA	83GRE 01
16	2		RTNA	82GRE 03
16	2	14	FAA	84HAR 01
16.2	1.5	D	CPXRF	84SIM 02
16.2	1.5	11	CPXRF	84SIM 01
16.4	3.1	11	FAA	85SUB 01
16.6	0.7		RTNA	84BEM 01
17	1	6	ICPMS	83DOU 01
17	1	11	ICPES	85NIS 01
17	1		ICPES	85HEE 01
17.4	2.2	11	CPXRF	84SIM 01
17.4	2.2	D	CPXRF	84SIM 02
17.5	0.3		FAA	84GLA 02
17.6	0.9		FAA	85GAU 04
18	1	11	ICPES	85NIS 01
18	2	14	FAA	84HAR 01
18	3		FAA	84GLA 11
18	4	6	ICPMS	83DOU 01
18.1	2.9	11	FAA	85SUB 01
19	2	14	FAA	84HAR 01
19.8	5.6	11	CPXRF	84SIM 01
20			FAA	82GLA 02
20	2	14	FAA	84HAR 01
20	2.5		ICPES	82DEM 01
20	3		FAA	83JEN 01
20	4.2		ICPES	85KIM 01
32		6	ICPMS	83DOU 01
Cr(III) (ng/g)				
14.9	2.1		ICPES	85COX 01

Conc	Uncer	Com	Method	Reference
Cr(VI) (ng/g)				
1.96	0.32		ICPES	85COX 01
Cu (ng/g)				
10	1		FAA	82JEN 02
15.5	1.8		FAA	83JEN 01
16			FAA	82GLA 02
17			AA	84GLA 11
17	1	14	FAA	84HAR 01
17	2		FAA	83JER 01
17	2.6		FAA	85GAU 04
17.1	3.8	11	FAA	85SUB 01
18	1	11	ICPES	85NIS 01
18	2	14	FAA	84HAR 01
18	2	14	FAA	84HAR 01
18	3		ICPES	85HEE 01
18	3	14	FAA	84HAR 01
18.8	2.4		NAA	84FEN 01
19	1		FAA	84GLA 02
19	2	11	ICPES	85NIS 01
19.1	0.6		RTNA	83GRE 01
19.1	0.6		RTNA	82GRE 03
19.2	2		RTNA	84BEM 01
19.3	3.1		ICPES	85LAN 02
19.5	1.3		ICPES	82DEM 01
19.5	3.2	11	FAA	85SUB 01
21	3	6	ICPMS	83DOU 01
21	10		ICPES	85KIM 01
31	10	6	ICPMS	83DOU 01
45		6	ICPMS	83DOU 01
Fe (ng/g)				
23	5		FAA	82JEN 02
78	9	14	FAA	84HAR 01
80	8		FAA	83JER 01
82	4		ICPES	85HEE 01
83	6	14	FAA	84HAR 01
84.5	1.8		ICPES	85LAN 02
85	2		FAA	83JEN 01
86	2		FAA	86GAU 01
86	7	14	FAA	84HAR 01
87			FAA	84SLA 02
88	2.5		ICPES	82DEM 01
88	7	14	FAA	84HAR 01
88	7		FAA	84GLA 02
88	16		RTNA	83GRE 01
88	16		RTNA	82GRE 03
90			FAA	84GLA 11
90	5	11	ICPES	85NIS 01
92	6	11	ICPES	85NIS 01
100			FAA	82GLA 02

TABLE 1643A-2: INDIVIDUAL DATA FOR NBS SRM 1643A (cont.)

Conc	Uncer	Com	Method	Reference
Hg (ng/g)				
< 4			ICPES	85HEE 01
0.2			ICPMS	85DAT 01
K (ug/g)				
1.5			FAA	82GLA 02
1.62	0.04		AA	84GLA 02
1.7	0.3		ICPES	85HEE 01
1.82			AA	85GAU 04
2.1	0.2	11	ICPES	85NIS 01
Li (ng/g)				
7			ICPMS	85DAT 01
Mg (ug/g)				
2.1	0.3	11	ICPES	85NIS 01
7.7	0.23		AA	85GAU 04
7.8			AA	84GLA 11
7.8	0.13		ICPES	85HEE 01
7.8	0.2	11	ICPES	85NIS 01
7.8	0.4		AA	84GLA 02
7.8	0.4	11	ICPES	85NIS 01
7.9	0.3		FAA	82GLA 02
9	0.2		ICPES	85LAN 02
Mn (ng/g)				
10	1		FAA	82JEN 02
24	2.5		ITNA	83JER 01
28	2.4		ICPES	85KIM 01
30	2	11	ICPES	85NIS 01
30	2	14	FAA	84HAR 01
30.9	0.6		RTNA	83GRE 01
30.9	0.6		RTNA	82GRE 03
31	3		FAA	83JEN 01
31.3	0.8		ICPES	82DEM 01
31.5	2		RTNA	84BEM 01
32			FAA	84GLA 11
32	0.7		ICPES	85LAN 02
32	2	14	FAA	84HAR 01
32	3	14	FAA	84HAR 01
32	3		FAA	84GLA 02
32.5	3.3		FAA	83JER 01
33	1		ICPES	85HEE 01
33	1	11	ICPES	85NIS 01
33.5			FAA	85GAU 04
34	6	14	FAA	84HAR 01
94	16	14	FAA	84HAR 01
95	9	14	FAA	84HAR 01
95.6	3.1		ICPES	85LAN 02
97	6		FAA	84MOK 01
97	6		RTNA	83GRE 01
97	6		RTNA	82GRE 03
97	8	11	ICPES	85NIS 01
98	12	14	FAA	84HAR 01
100	10	11	ICPES	85NIS 01
102	4		RTNA	84MOK 01
103	4.5		NAA	84FEN 01
106	5		ICPES	85HEE 01
106	24	14	FAA	84HAR 01
108			ICPMS	85DAT 01
Na (ug/g)				
8.9	0.4		AA	85GAU 04
9	0.2		AA	84GLA 02
9	0.2		FAA	82GLA 02
9.2	0.5	11	ICPES	85NIS 01
9.6			AA	84GLA 11
10	0.6	11	ICPES	85NIS 01
12	0.8		ICPES	85HEE 01
Ni (ng/g)				
31	3	6	ICPMS	83DOU 01
47	3	6	ICPMS	83DOU 01
47	4		FAA	83JEN 01
47	10		ICPES	85HEE 01
50.4	6.3		ICPES	85LAN 02
51	8	14	FAA	84HAR 01
52			FAA	85GAU 04
52	6	14	FAA	84HAR 01
54	5		FAA	83JER 01
54	7	14	FAA	84HAR 01
55			FAA	84GLA 11
55	5	11	ICPES	85NIS 01
55	7	14	FAA	84HAR 01
56		6	ICPMS	83DOU 01
56	1.5		ICPES	82DEM 01
56	8		RTNA	83GRE 01
56	8		RTNA	82GRE 03
57			FAA	82GLA 02
60	3	11	ICPES	85NIS 01
62	18		ICPES	85KIM 01

TABLE 1643A-2: INDIVIDUAL DATA FOR NBS SRM 1643A (cont.)

Conc	Uncer	Com	Method	Reference
NO3 (ug/g)				
1			ISE	84GLA 02
Pb (ng/g)				
<	50		ICPES	85LAN 02
22	5		ICPES	85HEE 01
24.1	0.8	11	FAA	85SUB 01
25.2			FAAC	86GAU 01
26	2		FAA	82GLA 02
26.8			FAA	86GAU 01
27	1		FAA	83JEN 01
27	2		FAA	85GAU 04
27	3		FAAC	85GAU 04
27.4			AAC	86GAU 01
27.6			ICPMS	85DAT 01
28	2		FAA	84GLA 02
28	2		FAA	84GLA 11
28	3		FAA	83JER 01
28.9	9.1	11	FAA	85SUB 01
29	2		ICPMS	83DOU 02
30	38		ICPES	85KIM 01
41	5		FAA	82JEN 02
Se (ng/g)				
<	40		ICPES	85HEE 01
10	1		FAA	84GLA 02
11			FAA	84GLA 11
11			FAA	84SLA 02
11.5	0.5		NAA	81KAH 01
12			ICPMS	85DAT 01
12	0.8		FAA	85GAU 04
35	40		ICPES	85KIM 01
Sr (ng/g)				
200		6	ICPMS	83DOU 01
206	50	6	ICPMS	83DOU 01
220			ICPMS	85DAT 01
225	32	6	ICPMS	83DOU 01
232	5	11	ICPES	85NIS 01
236			FAA	84GLA 02
239	5	11	ICPES	85NIS 01
240	2.5		ICPES	82DEM 01
246	6		ICPES	85HEE 01
U (ng/g)				
<	0.01		RTNA	84BEM 01
V (ng/g)				
44		6	ICPMS	83DOU 01
50	1		ICPES	85HEE 01
50	1.3		NAA	84FEN 01
51.1	4.8		ICPES	85LAN 02
52	1		RTNA	83GRE 01
52	1		RTNA	82GRE 03
52	5	14	FAA	84HAR 01
53	1		ITNA	83JER 01
53	1	11	ICPES	85NIS 01
54	1	11	ICPES	85NIS 01
54	8	14	FAA	84HAR 01
55	10	14	FAA	84HAR 01
56	5	6	ICPMS	83DOU 01
56	9	14	FAA	84HAR 01
71	12	6	ICPMS	83DOU 01
Zn (ng/g)				
21		6	ICPMS	83DOU 01
57	6		FAA	82JEN 02
58	9	14	FAA	84HAR 01
60	7	6	ICPMS	83DOU 01
61	4.2		ICPES	85KIM 01
62	16	14	FAA	84HAR 01
63			FAA	85GAU 04
65	2		AA	84GLA 11
65.1	0.3		FAA	83JEN 01
66	2		FAA	84GLA 02
68	1		ICPES	85HEE 01
68	5		RTNA	82GRE 03
68	5		RTNA	83GRE 01
69.7	2.4		ICPES	85LAN 02
70	5	11	ICPES	85NIS 01
70	5	11	ICPES	85NIS 01
70	7		FAA	83JER 01
70	11	6	ICPMS	83DOU 01
70	12	14	FAA	84HAR 01
70.2	0.6		ICPES	82DEM 01
72.5	2		RTNA	84BEM 01
76			FAA	82GLA 02
77	3	6	ICPMS	83DOU 01
77	7	14	FAA	84HAR 01

TABLE 1643B-1: COMPILED DATA FOR NBS SRM 1643B TRACE ELEMENTS IN WATER (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS	MEDIAN	RANGE	AA	OTHER METHODS
		Mean ± SD	Mean ± SD (n)			Mean ± SD (n)	Mean (n) Method
Ag	ng/g	9.8 ± 0.8	10.6 (1)	---	---	10.6 (1)	---
As	ng/g	49	50 (2)	---	46 - 54	50 (2)	---
B	ng/g	94	---	---	---	---	---
Ba	ng/g	44 ± 2	42 (2)	---	41 - 43	42 (2)	---
Be	ng/g	19 ± 2	---	---	---	---	---
Bi	ng/g	11	---	---	---	---	---
Ca	ug/g	35	33 (2)	---	31 - 35	35 (1)	31 (1) TITR
Cd	ng/g	20 ± 1	20.0 ± 1.2 (4)	19.4	18.8 - 21.7	19.7 (2)	18.8 (1) AAC
Cd	ng/g	---	---	---	---	---	21.7 (1) FAAC
Co	ng/g	26 ± 1	---	---	---	---	---
Cr	ng/g	18.6 ± 0.4	18.4 (2)	---	17.6 - 19.2	18.4 (2)	---
Cu	ng/g	21.9 ± 0.4	21.7 (2)	---	19.4 - 24	21.7 (2)	---
Fe	ng/g	99 ± 8	98.4 (2)	---	97.7 - 99.2	97.7 (1)	99.2 (1) IDMS
K	ug/g	3	---	---	---	---	---
Mg	ug/g	15	---	---	---	---	---
Mn	ng/g	28 ± 2	26.7 ± 1.6 (3)	27.2	25 - 28	26.7 ± 1.6 (3)	---
Mo	ng/g	85 ± 3	---	---	---	---	---
Na	ug/g	8	---	---	---	---	---
Ni	ng/g	49 ± 3	69 (1)	---	---	69 (1)	---
Pb	ng/g	23.7 ± 0.7	24 ± 3 (4)	22	21 - 27	25.8 (2)	21 (1) AAC
Pb	ng/g	---	---	---	---	---	22 (1) FAAC
Se	ng/g	9.7 ± 0.5	9.1 (2)	---	9 - 9.2	9.1 (2)	---
Sr	ng/g	227 ± 6	---	---	---	---	---
Tl	ng/g	8.0 ± 0.2	---	---	---	---	---
V	ng/g	45.2 ± 0.4	---	---	---	---	---
Zn	ng/g	66 ± 2	68.2 (2)	---	66 - 70.5	68.2 (2)	---

TABLE 1643B-2: INDIVIDUAL DATA FOR NBS SRM 1643B (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ag (ng/g)				
10.6	1.1		FAA	86GAU 01
As (ng/g)				
46	16		FAA	86GAU 01
54	5		FAA	85GAU 04
Ba (ng/g)				
41	4		FAA	86GAU 01
43			FAA	85GAU 04
Ca (ug/g)				
31	2		TITR	85GAU 04
35			AA	85GAU 04
Cd (ng/g)				
18.8			AAC	86GAU 01
19.4	0.6		FAA	86GAU 01
20			FAA	85GAU 04
21.7			FAAC	86GAU 01
Cr (ng/g)				
17.6	1.1		FAA	86GAU 01
19.2	1.8		FAA	85GAU 04
Cu (ng/g)				
19.4	1.5		AA	86GAU 01
24	8		FAA	85GAU 04
Fe (ng/g)				
97.7	6.4		FAA	86GAU 01
99.2	2.5		IDMS	84FAS 01
Mn (ng/g)				
25	2		FAA	85GAU 04
27.2			AA	86GAU 01
28	3.5		FAA	86GAU 01
Ni (ng/g)				
69			FAA	85GAU 04
Pb (ng/g)				
21			AAC	86GAU 01
22			FAAC	86GAU 01
24.5	1.2		FAA	86GAU 01
27	3		FAA	85GAU 04
Se (ng/g)				
9	1.1		FAA	86GAU 01
9.2	1.4		FAA	85GAU 04
Zn (ng/g)				
66	3		FAA	85GAU 04
70.5	2.1		AA	86GAU 01

TABLE 1645-1: COMPILED DATA FOR NBS SRM 1645 RIVER SEDIMENT (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		XRF		OTHER METHODS		
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method
Ag	ug/g	---	1.75	(1)	---	---	---		---		---		---		1.75	(1)	IDMS
Al	%	2.26 ± 0.04	2.20 ± 0.25	(9)	2.14	1.4 - 2.54	2.42	(1)	2.45	(2)	1.9 ± 0.6	(5)	1.90	(2)	1.4	(1)	DCPES
As	ug/g	66	67 ± 3	(19)	66	62.6 - 75	66.0 ± 1.6	(6)	67 ± 4	(4)	66 ± 3	(6)	85	(2)	87	(1)	PAA
As	ug/g	---	---		---	---	---		---		---		---		71.3	(1)	DCPES
As	ug/g	---	---		---	---	---		---		---		---		47	(1)	AF
As	ug/g	---	---		---	---	---		---		---		---		65	(1)	FAE
B	ug/g	---	31	(1)	---	---	---		---		---		---		31	(1)	TCGS
Ba	ug/g	---	374 ± 26	(4)	370	340 - 400	---		340	(1)	385 ± 15	(3)	---		---		
Be	ug/g	---	1.0	(1)	---	---	---		---		1.0	(1)	---		---		
Bi	ng/g	---	600	(1)	---	---	---		---		---		---		600	(1)	AF
COD	g/kg	149.4 ± 9	---		---	---	---		---		---		---		---		
Ca	%	2.9	2.65 ± 0.34	(14)	2.62	2.00 - 3.11	2.6	(2)	2.73	(1)	2.5 ± 0.3	(7)	2.8 ± 0.4	(3)	2.93	(1)	PAA
Cd	ug/g	10.2 ± 1.5	10.0 ± 0.7	(25)	10	8.9 - 11.4	9.6 ± 0.8	(10)	9.55	(2)	10.2 ± 1.0	(9)	---		11	(1)	PAA
Cd	ug/g	---	---		---	---	---		---		---		---		9.1	(1)	IDMS
Cd	ug/g	---	---		---	---	---		---		---		---		10.3 ± 0.2	(3)	AF
Cd	ug/g	---	---		---	---	---		---		---		---		11.4	(1)	AE-AF
Ce	ug/g	---	24	(2)	---	20 - 28	---		---		---		---		24	(2)	PAA
Co	ug/g	10.1 ± 0.6	9.4 ± 1.9	(10)	8.5	6.7 - 12.8	6.95	(2)	8.8 ± 1.0	(3)	11.2 ± 1.1	(4)	---		8.5	(1)	PAA
Co-60	pCi/g	---	< 0.06		---	---	---		---		---		---		< 0.06		GAMMA
Cr	%	2.96 ± 0.28	2.93 ± 0.31	(30)	2.91	2.1 - 3.52	2.92 ± 0.18	(5)	3.17 ± 0.15	(7)	2.6 ± 0.4	(13)	3.16 ± 0.36	(4)	2.64	(2)	PAA
Cr	%	---	---		---	---	---		---		---		---		2.1	(1)	DCPES
Cs	ug/g	---	2.8 ± 0.5	(3)	2.69	2.32 - 3.3	---		2.8 ± 0.5	(3)	---		---		---		
Cs-137	pCi/g	---	< 0.05		---	---	---		---		---		---		< 0.05		GAMMA
Cu	ug/g	109 ± 19	108 ± 11	(30)	108	84 - 128	109 ± 12	(7)	124	(2)	108 ± 8	(10)	107 ± 21	(4)	106	(1)	PAA
Cu	ug/g	---	---		---	---	---		---		---		---		104	(2)	ASV
Cu	ug/g	---	---		---	---	---		---		---		---		102	(1)	DCPES
Dy	ug/g	---	2.0	(1)	---	---	---		---		---		---		2.0	(1)	DCPES
Eu	ug/g	---	0.50	(2)	---	0.31 - 0.70	---		0.31	(1)	0.7	(1)	---		---		
F	ug/g	900	1540	(2)	---	1336 - 1740	---		---		---		---		1538	(2)	ISE
Fe	%	11.3 ± 1.2	10.2 ± 1.3	(26)	10.4	7.7 - 12.9	10.8 ± 0.9	(4)	9.5	(2)	10.2 ± 1.4	(13)	10.4 ± 1.5	(5)	10.51	(1)	PAA
Fe	%	---	---		---	---	---		---		---		---		7.9	(1)	DCPES

TABLE 1645-1: COMPILED DATA FOR NBS SRM 1645 RIVER SEDIMENT (cont.)

ELE	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	AA Mean ± SD (n)	NAA Mean ± SD (n)	ICPES Mean ± SD (n)	XRF Mean ± SD (n)	OTHER METHODS Mean ± SD (n) Method
Ga	ug/g	---	41 ± 23 (4)	38	14 - 71	---	---	38 (1)	55.5 (2)	14 (1) DCPES
Gd	ug/g	---	1.06 (2)	---	0.96 - 1.16	---	---	---	---	1.06 (2) TCGS
Hf	ug/g	---	1.39 (1)	---	---	---	1.39 (1)	---	---	---
Hg	ug/g	1.1 ± 0.5	0.99 ± 0.21 (12)	0.949	0.67 - 1.30	0.96 ± 0.19 (5)	1.07 ± 0.17 (4)	0.83 (1)	---	1.3 (1) PAA
Hg	ug/g	---	---	---	---	---	---	---	---	0.55 (2) AF
In	ng/g	---	< 790	---	---	---	< 790	---	---	---
K	%	1.26 ± 0.05	1.02 ± 0.25 (8)	0.893	0.608 - 1.40	---	---	1.05 ± 0.18 (3)	1.0 ± 0.3 (5)	---
K-40	pCi/g	---	11.36 (2)	---	11.36 - 11.36	---	---	---	---	11.36 (1) GAMMA
LOI	%	10.72 ± 0.28	---	---	---	---	---	---	---	---
La	ug/g	9	24 (2)	---	15 - 33	---	---	15 (1)	---	33 (1) DCPES
Mg	%	0.74 ± 0.02	0.72 ± 0.08 (12)	0.684	0.603 - 0.843	0.75 (1)	0.603 (1)	0.73 ± 0.09 (9)	---	0.684 (1) PAA
Mn	ug/g	785 ± 97	752 ± 34 (20)	750	700 - 838	744 ± 30 (4)	762 (1)	777 ± 54 (9)	700 (1)	750 (1) PAA
Mn	ug/g	---	---	---	---	---	---	---	---	770 (1) DCPES
Mn	ug/g	---	---	---	---	---	---	---	---	746 (1) AE-AF
Mo	ug/g	---	34 ± 8 (3)	37	25 - 40	---	---	37 (1)	---	25 (1) PAA
Mo	ug/g	---	---	---	---	---	---	---	---	40 (1) DCPES
N (Kjeldahl)	ug/g	797 ± 48	---	---	---	---	---	---	---	---
Na	ug/g	5400 ± 100	5100 ± 600 (8)	5200	4100 - 5600	3200 (1)	5600 (1)	5040 ± 640 (5)	4700 (1)	5450 (1) PAA
Nb	ug/g	---	16 (2)	---	1.4 - 30	---	---	---	---	1.4 (1) PAA
Nb	ug/g	---	---	---	---	---	---	---	---	30 (1) DCPES
Ni	ug/g	45.8 ± 2.9	46 ± 5 (27)	46	33 - 57.8	43 ± 2 (5)	55 (1)	50 ± 5 (9)	37 ± 10 (5)	46 (1) DCPES
Ni	ug/g	---	---	---	---	---	---	---	---	47.4 ± 0.7 (4) PAA
Ni	ug/g	---	---	---	---	---	---	---	---	37.6 (1) AE-AF
Oil&Gr	%	1.71 ± 0.26	---	---	---	---	---	---	---	---
P	ug/g	510 ± 10	470 ± 40 (4)	452	429 - 527	---	---	447 ± 16 (3)	---	527 (1) DCPES
Pb	ug/g	714 ± 28	710 ± 29 (29)	705	631 - 771	701 ± 18 (11)	---	705 ± 47 (10)	720 ± 14 (4)	724 (1) PAA
Pb	ug/g	---	---	---	---	---	---	---	---	631 (1) AF
Pb	ug/g	---	---	---	---	---	---	---	---	708 (2) ASV
Pb	ug/g	---	---	---	---	---	---	---	---	771 (1) AE-AF
Pd	ng/g	---	1.0 (1)	---	---	---	---	---	---	1.0 (1) IDMS

TABLE 1645-1: COMPILED DATA FOR NBS SRM 1645 RIVER SEDIMENT (cont.)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		XRF		OTHER METHODS	
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD (n)	Method
Pr	ug/g	---	14	(1)	---	---	---		---		14	(1)	---		---	
Ra-226	pCi/g	---	0.86	(2)	---	0.86 - 0.86	---		---		---		---		0.86	(1) GAMMA
Rb	ug/g	---	41 ± 4	(6)	39	38 - 50	---		45.7	(2)	---		38.7 ± 0.6	(3)	40	(1) PAA
S	%	1.1	4.35	(2)	---	3.68 - 5.02	---		---		---		4.35	(2)	---	
Sb	ug/g	51	31 ± 6	(11)	33.2	21.7 - 47.2	33 ± 10	(4)	31 ± 7	(7)	38	(1)	---		52	(1) PAA
Sc	ug/g	2.0	2.6	(2)	---	2.13 - 3.1	---		2.6	(2)	---		---		---	
Se	ug/g	1.5	1.27 ± 0.35	(5)	1.3	0.85 - 5	1.7	(1)	1.2 ± 0.3	(3)	3	(2)	---		---	
Se(IV)	ug/g	---	0.02	(1)	---	---	0.02	(1)	---		---		---		---	
Se(VI)	ug/g	---	0.08	(1)	---	---	0.08	(1)	---		---		---		---	
Si	%	---	23.3 ± 2.7	(5)	23.6	19.7 - 27.27	23.6	(1)	27.27	(1)	22.2	(1)	19.7	(1)	23.7	(1) DCPES
Sm	ug/g	---	1.24	(2)	---	1.22 - 1.26	---		---		---		---		1.24	(2) TCGS
Sn	ug/g	---	360 ± 50	(3)	366	313 - 416	340	(2)	416	(1)	---		---		---	
Sr	ug/g	---	880 ± 90	(8)	870	747 - 1033	---		---		920 ± 240	(3)	943 ± 70	(4)	856	(2) PAA
Ta	ng/g	---	220	(1)	---	---	---		220	(1)	---		---		---	
Te	ug/g	---	4.6	(1)	---	---	---		---		---		---		4.6	(1) IDMS
Th	ug/g	1.62 ± 0.22	18 ± 16	(3)	19	1.8 - 34	---		---		---		26.5	(2)	1.8	(1) PAA
Ti	ug/g	---	500 ± 160	(10)	491	245 - 700	700	(1)	---		410 ± 180	(6)	374	(2)	734	(2) PAA
Ti	ug/g	---	---		---	---	---		---		---		---		600	(1) DCPES
Tl	ug/g	1.44 ± 0.07	3.65	(2)	---	1.9 - 5.4	5.4	(1)	---		---		---		1.9	(1) PAA
U	ug/g	1.11 ± 0.05	1.15 ± 0.19	(7)	1.16	0.8 - 1.4	---		1.11 ± 0.17	(6)	---		---		1.4	(1) PAA
V	ug/g	23.5 ± 6.9	26 ± 4	(13)	26	17.9 - 34	19.8	(2)	29	(1)	27 ± 3	(8)	26	(1)	34	(1) DCPES
W	ug/g	---	54	(1)	---	---	---		---		---		---		54	(1) DCPES
Y	ug/g	---	7.2	(2)	---	7 - 7.4	---		---		7	(1)	---		7.4	(1) PAA
Yb	ng/g	---	600	(1)	---	---	---		---		600	(1)	---		---	
Zn	ug/g	1720 ± 170	1700 ± 110	(31)	1726	1414 - 1878	1710 ± 80	(5)	1610	(2)	1720 ± 90	(9)	1610 ± 210	(6)	1635	(2) PAA
Zn	ug/g	---	---		---	---	---		---		---		---		1720	(1) AE-AF
Zn	ug/g	---	---		---	---	---		---		---		---		1760 ± 30	(3) AF
Zn	ug/g	---	---		---	---	---		---		---		---		1500	(1) DCPES
Zr	ug/g	---	61 ± 9	(3)	57	55 - 71	---		---		---		---		63	(2) PAA
Zr	ug/g	---	---		---	---	---		---		---		---		57	(1) DCPES

TABLE 1645-2: INDIVIDUAL DATA FOR NBS SRM 1645 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ag (ug/g)				
1.75			IDMS	83LOS 01
Al (%)				
0.5			ICPES	84SUN 01
0.66			ICPES	84SUN 01
0.9		11	ICPES	84WOL 01
1.4	0.1		DCPES	81CAN 01
1.68		6	EXRF	84JEN 01
2.09	0.32	11	ICPES	84NAD 01
2.11		6	EXRF	84JEN 01
2.14			ICPES	84SUN 01
2.18	0.028		ICPES	84HIR 01
2.23	0.11	11	ICPES	84NAD 01
2.37	0.04	35	ITNA	81GLA 02
2.42	0.12		AA	81FAR 01
2.5392	0.1587		ITNA	85PEN 01
3.9			ICPES	80FLO 01
6.9		11	ICPES	84WOL 01
23.8		11	ICPES	84WOL 01
As (ug/g)				
47			AF	85NAR 02
62.6	2.1		RTNA	82ELS 02
63			ICPES	85NAR 02
64	3.6		FAA	85FAN 01
65		11	FAA	83XIA 01
65	1		ICPES	84LIV 01
65	1		FAE	80DSI 01
66			HAA	80AGE 03
66		11	FAA	83XIA 01
66	5		IENA	82GLA 02
66	13	11	ICPES	84NAD 01
66.4			ICPES	81GOU 01
66.6	4.3		FAA	83LOV 01
67			ICPES	82NYG 01
68			IENA	84GLA 02
68.7	4.1		FAA	83CAR 01
71			ICPES	80FLO 01
71.3	1.3		DCPES	84URA 01
72			ITNA	81SLO 01
75			WXRF	84ZSO 01
87			PAA	80BER 01
95		6	EXRF	84JEN 01
172		6	EXRF	84JEN 01
B (ug/g)				
31	3		TCGS	84GLA 01

Conc	Uncer	Com	Method	Reference
Ba (ug/g)				
178	15		PAA	80KAT 01
340	50	35	ITNA	81GLA 02
370	36	11	ICPES	84NAD 01
385	42	11	ICPES	84NAD 01
400			ICPES	80FLO 01
Be (ug/g)				
1			ICPES	80FLO 01
Bi (ng/g)				
<	100		FAA	82MAT 02
600			AF	85NAR 02
Ca (%)				
2		11	ICPES	84WOL 01
2.3			ICPES	84SUN 01
2.3	0.1		AA	83CAR 01
2.33		6	XRF	78TAK 01
2.39	0.06	11	ICPES	84NAD 01
2.6		11	ICPES	84WOL 01
2.62	0.06	11	ICPES	84NAD 01
2.73	0.15	35	ITNA	81GLA 02
2.8			ICPES	84SUN 01
2.9	0.13		AA	81FAR 01
2.93	0.01		PAA	80KAT 01
3			ICPES	84SUN 01
3.1			EXRF	83MAH 03
3.106		6	XRF	78TAK 01
4.1		11	ICPES	84WOL 01
4.2			ICPES	80FLO 01
4.59		6	EXRF	84JEN 01
6.55		6	EXRF	84JEN 01
Cd (ug/g)				
7.2	0.4	11	FAA	83CAR 01
7.6	0.4		AA	83CAR 01
8.9	0.4		RTNA	80VAL 01
8.9	0.8		ICPES	84MAR 01
9			ICPES	84SUN 01
9.1	0.3		IDMS	80ROS 01
9.2	0.5		FAA	81FAR 01
9.3	0.1	11	AA	82SAK 01
9.4		11	FAA	83CAR 01
9.5			ICPES	84SUN 01
9.55	0.22	11	AA	82SAK 01
9.8		11	AA	84WOL 01

TABLE 1645-2: INDIVIDUAL DATA FOR NBS SRM 1645 (cont.)

Conc	Uncer	Com	Method	Reference
Cd (ug/g) cont.				
10		11	AA	84WOL 01
10			ICPES	84SUN 01
10			ICPES	80FLO 01
10.1		6	AF	84NAR 02
10.1	0.6	11	AA	83HSU 01
10.2	0.4		RTNA	79DER 01
10.25			AF	85NAR 02
10.3		11	AA	84WOL 01
10.5		6	AF	84NAR 02
10.5	0.4	11	AA	83HSU 01
10.8			ICPES	85NAR 02
10.8	2		ICPES	82SCH 04
11			PAA	80BER 01
11.2		6	ICPES	83CHA 01
11.4	4.3		AE-AF	82GOL 01
11.98		6	ICPES	83CHA 01
Ce (ug/g)				
20	0.6		PAA	80KAT 01
28			PAA	80BER 01
120	10		DCPES	81CAN 01
Co (ug/g)				
6.7	0.5	11	FAA	83CAR 01
7.2		11	FAA	83CAR 01
8	0.2	35	ITNA	81GLA 02
8.4	0.7		RTNA	77MEL 01
8.5	0.3		PAA	80KAT 01
9.96	0.12		RTNA	79DER 01
10.4			ICPES	84SUN 01
10.8			ICPES	84SUN 01
11			ICPES	80FLO 01
12.8			ICPES	84SUN 01
15.6	0.6		ICPES	84HIR 01
24			PAA	80BER 01
Co-60 (pCi/g)				
<	0.06		UU	84MEL 01
<	0.06		GAMMA	84KRI 01

Conc	Uncer	Com	Method	Reference
Cr (%)				
1.88	0.27	11	ICPES	84NAD 01
1.98	0.24	11	ICPES	84NAD 01
2			ICPES	84SUN 01
2.1	0.2		DCPES	81CAN 01
2.29	0.08		PAA	80KAT 01
2.5	0.4		RTNA	77MEL 01
2.66			EXRF	83MAH 03
2.67	0.03		ICPES	84HIR 01
2.7		11	ICPES	84WOL 01
2.7	0.2		FAA	83CAR 01
2.8			ICPES	84SUN 01
2.8	0.17		AA	83CAR 01
2.85			ICPES	84SUN 01
2.88		6	ICPES	83CHA 01
2.9		11	ICPES	84WOL 01
2.91	0.01	11	AA	82SAK 01
2.91	0.24		ICPES	82SCH 04
2.93		6	ICPES	83CHA 01
2.97	0.125	11	RTNA	76STE 01
2.98			PAA	80BER 01
2.99	0.13	35	ITNA	81GLA 02
3		11	ICPES	84WOL 01
3	0.27	11	AA	82SAK 01
3.02			ICPES	80FLO 01
3.15	0.147	11	RTNA	76STE 01
3.16	0.152	11	RTNA	76STE 01
3.18	0.08		AA	81FAR 01
3.19	0.038	6	XRF	80IWA 01
3.25	0.049	6	XRF	80IWA 01
3.25	0.152	11	RTNA	76STE 01
3.2706	0.155		ITNA	76STE 01
3.4	0.148	11	RTNA	76STE 01
3.52		6	XRF	78TAK 01
4.17		6	EXRF	84JEN 01
6.28		6	EXRF	84JEN 01
Cs (ug/g)				
2.32	0.13	35	ITNA	81GLA 02
2.69	0.14		ITNA	84GLA 11
3.3	0.2		RTNA	77MEL 01
Cs-137 (pCi/g)				
<	0.05		GAMMA	84KRI 01
<	0.05		UU	84MEL 01

TABLE 1645-2: INDIVIDUAL DATA FOR NBS SRM 1645 (cont.)

Conc	Uncer	Com	Method	Reference
Cu (ug/g)				
78		6	XRF	78TAK 01
84		6	ICPES	83CHA 01
90		6	ICPES	83CHA 01
90.9	11.2		AA	84KAN 01
96	14		ASV	81DOG 01
98		11	VV	84WOL 01
100	20		AA	77YAN 01
101		11	VV	84WOL 01
101	4.2		ICPES	84HIR 01
102	8		DCPES	81CAN 01
103	8		FAA	83CAR 01
105			ICPES	84SUN 01
105	14		ICPES	82SCH 04
106			PAA	80BER 01
108		6	XRF	78TAK 01
108		11	VV	84WOL 01
108	5	11	ICPES	84NAD 01
108	11		ICPES	84SOB 01
109	6		AA	83CAR 01
111	5		ASV	83MAD 01
111	7		FAA	81FAR 01
112			ICPES	84SUN 01
112			ICPES	84SUN 01
113		6	XRF	78TAK 01
115	7	11	ICPES	84NAD 01
119			ICPES	80FLO 01
123	6		RTNA	79DER 01
124	4	11	AA	82SAK 01
125	3	11	AA	82SAK 01
125.2	8.2		RTNA	80VAL 01
128			WXRF	84ZSO 01
190	66		EXRF	83MAH 03
213		6	EXRF	84JEN 01
379		6	EXRF	84JEN 01
Dy (ug/g)				
2	0.2		DCPES	81CAN 01
Eu (ug/g)				
0.31	0.03	35	ITNA	81GLA 02
0.7			ICPES	80FLO 01
F (ug/g)				
1336	97		ISE	83BET 02
1740	60		ISE	83KNA 01
Fe (%)				
7.7			ICPES	84SUN 01
7.9	0.4		DCPES	81CAN 01
8.372		6	XRF	78TAK 01
8.5	0.5		RTNA	77MEL 01
8.8		11	ICPES	84WOL 01
9.05	0.19	11	ICPES	84NAD 01
9.25	0.11	11	ICPES	84NAD 01
9.5		11	ICPES	84WOL 01
9.7	0.5		AA	83CAR 01
9.74	0.12		ICPES	84HIR 01
9.89		6	XRF	78TAK 01
10.3			ICPES	84SUN 01
10.4		6	XRF	78TAK 01
10.4			ICPES	84SUN 01
10.5	0.3	35	ITNA	81GLA 02
10.51	0.18		PAA	80KAT 01
10.6	0.3		AA	81FAR 01
11		6	ICPES	83CHA 01
11.2			EXRF	83MAH 03
11.2	0.6	11	AA	82SAK 01
11.4	1.3		ICPES	82SCH 04
11.5			ICPES	80FLO 01
11.5		6	ICPES	83CHA 01
11.8	0.2	11	AA	82SAK 01
12.3		6	EXRF	84JEN 01
12.9		11	ICPES	84WOL 01
20.1		6	EXRF	84JEN 01
Ga (ug/g)				
14	1		DCPES	81CAN 01
38			ICPES	80FLO 01
40		6	EXRF	84JEN 01
71		6	EXRF	84JEN 01
Gd (ug/g)				
0.96	0.14	4	TCGS	85GLA 05
1.16	0.15	4	TCGS	85GLA 05
Hf (ug/g)				
1.39	0.07	35	ITNA	81GLA 02

TABLE 1645-2: INDIVIDUAL DATA FOR NBS SRM 1645 (cont.)

Conc	Uncer	Com	Method	Reference
Hg (ug/g)				
0.4		6	AF	84NAR 02
0.67	0.07		FAA	83CAR 01
0.7		6	AF	84NAR 02
0.83	0.05		ICPES	84MAR 01
0.85	0.036		CVAA	80NAD 01
0.937	0.36		RTNA	84DEL 01
0.949	0.055		RTNA	84DRA 01
1.05	0.19		CVAA	81KAH 01
1.1	0.04		CVAA	83CAR 01
1.1	0.1		RTNA	77MEL 01
1.11	0.26		CVAA	80WHI 01
1.3			PAA	80BER 01
1.3	0.2		RTNA	80VAL 01
In (ng/g)				
<	790		RTNA	83BER 01
K (%)				
0.04			ICPES	84SUN 01
0.09	0.002		AA	83CAR 01
0.15			ICPES	84SUN 01
0.608		6	EXRF	84JEN 01
0.857		6	EXRF	84JEN 01
0.87	0.12	11	ICPES	84NAD 01
0.893		6	XRF	78TAK 01
1.06	0.13	11	ICPES	84NAD 01
1.22			ICPES	84SUN 01
1.24		6	XRF	78TAK 01
1.4			EXRF	83MAH 03
K-40 (pCi/g)				
11.36			UU	84MEL 01
11.36			GAMMA	84KRI 01
La (ug/g)				
15			ICPES	80FLO 01
33	3		DCPES	81CAN 01
Mg (%)				
0.603	0.1809		ITNA	85PEN 01
0.62	0.16	11	ICPES	84NAD 01
0.65	0.02	11	ICPES	84NAD 01
0.67	0.0092		ICPES	84HIR 01
0.6823		11	ICPES	84WOL 01
0.684	0.01		PAA	80KAT 01
0.7095		11	ICPES	84WOL 01

Conc	Uncer	Com	Method	Reference
Mg (%) cont.				
0.75	0.02		AA	81FAR 01
0.78			ICPES	84SUN 01
0.82			ICPES	84SUN 01
0.84			ICPES	84SUN 01
0.8426		11	ICPES	84WOL 01
2.1	0.1		AA	83CAR 01
2.3			XRF	83CAR 01
4.1			ICPES	80FLO 01
Mn (ug/g)				
700			EXRF	83MAH 03
707	7.2		ICPES	84HIR 01
710	40	11	ICPES	84NAD 01
716	110	11	AA	82SAK 01
721		11	VV	84WOL 01
723	77	11	AA	82SAK 01
735		11	VV	84WOL 01
746	130		AE-AF	82GOL 01
750			ICPES	80FLO 01
750		11	VV	84WOL 01
750	18		PAA	80KAT 01
756	15		AA	83CAR 01
760	30	11	ICPES	84NAD 01
762	9	35	ITNA	81GLA 02
768	85		ICPES	82SCH 04
770	30		DCPES	81CAN 01
780	90		AA	81FAR 01
793	52		ICPES	84SOB 01
798			ICPES	84SUN 01
838			ICPES	84SUN 01
870			ICPES	84SUN 01
1460		6	XRF	78TAK 01
3321		6	XRF	78TAK 01
Mo (ug/g)				
25			PAA	80BER 01
37	1.9		ICPES	84HIR 01
40	2		DCPES	81CAN 01
Na (ug/g)				
1600			ICPES	84SUN 01
2050			ICPES	84SUN 01
3200	100		AA	83CAR 01
4100	500	11	ICPES	84NAD 01
4700			XRF	83CAR 01
4700	400	11	ICPES	84NAD 01
5200			ICPES	84SUN 01
5450	110		PAA	80KAT 01
5600		6	ICPES	83CHA 01
5600		6	ICPES	83CHA 01
5600	200	35	ITNA	81GLA 02

TABLE 1645-2: INDIVIDUAL DATA FOR NBS SRM 1645 (cont.)

Conc	Uncer	Com	Method	Reference
Nb (ug/g)				
1.4	0.07		PAA	80KAT 01
30	3		DCPES	81CAN 01
Ni (ug/g)				
28		6	XRF	78TAK 01
30		6	XRF	78TAK 01
33		6	XRF	78TAK 01
37.6	6.4		AE-AF	82GOL 01
39.8		11	FAA	83CAR 01
41	2	11	AA	82SAK 01
42	4	11	AA	82SAK 01
43		11	VV	84WOL 01
44		6	ICPES	83CHA 01
44.7	2.7		AA	83CAR 01
44.9		11	VV	84WOL 01
45		11	VV	84WOL 01
45			ICPES	80FLO 01
45.8	2.8	11	FAA	83CAR 01
46	4		DCPES	81CAN 01
46.1	2.5		ICPES	82SCH 04
46.6	4.6		PAA	78MAS 01
47			ICPES	84SUN 01
47	3		PAA	80KAT 01
48			PAA	80BER 01
48		6	EXRF	84JEN 01
48			PAA	78KAT 01
48			WXRF	84ZSO 01
50		6	ICPES	83CHA 01
52			ICPES	84SUN 01
53			ICPES	84SUN 01
55	2.4		ICPES	84HIR 01
55	3		RTNA	77MEL 01
57.8	7.7		ICPES	84SOB 01
85		6	EXRF	84JEN 01
P (ug/g)				
429	9	11	ICPES	84NAD 01
452	27		ICPES	84HIR 01
459	31	11	ICPES	84NAD 01
526.9	6.4		DCPES	84URA 01
Pb (ug/g)				
538	39	11	ICPES	84NAD 01
597	40	11	ICPES	84NAD 01
631			AF	85NAR 02
670	22		ICPES	84MAR 01
680	20		AA	77YAN 01
683	29		FAA	81FAR 01
Pb (ug/g) cont.				
684	35		FAA	83CAR 01
685		11	AA	84WOL 01
685	10	11	AA	82SAK 01
693			ICPES	85NAR 02
695	45		ASV	81DOG 01
701		6	ICPES	83CHA 01
704		6	ICPES	83CHA 01
705		11	AA	84WOL 01
705		6	EXRF	84JEN 01
705	35		AA	83CAR 01
717		6	XRF	78TAK 01
718	28	11	AA	83HSU 01
719		6	XRF	78TAK 01
721	20		ICPES	82SCH 04
721	26	11	AA	83HSU 01
722	18		ASV	83MAD 01
724			PAA	80BER 01
724	43	11	AA	82SAK 01
725			ICPES	80FLO 01
725		11	AA	84WOL 01
732			ICPES	84SUN 01
740			EXRF	83MAH 03
745			ICPES	84SUN 01
768			ICPES	84SUN 01
771	231		AE-AF	82GOL 01
1019		6	XRF	78TAK 01
1270		6	EXRF	84JEN 01
Pd (ng/g)				
1			IDMS	83LOS 01
Pr (ug/g)				
14			ICPES	80FLO 01
Ra-226 (pCi/g)				
0.86			UU	84MEL 01
0.86			GAMMA	84KRI 01
Rb (ug/g)				
38		6	XRF	78TAK 01
39		6	EXRF	84JEN 01
39		6	XRF	78TAK 01
40	2		PAA	80KAT 01
41.4	0.5		RTNA	77MEL 01
50	7	35	ITNA	81GLA 02
70		6	EXRF	84JEN 01

TABLE 1645-2: INDIVIDUAL DATA FOR NBS SRM 1645 (cont.)

Conc	Uncer	Com	Method	Reference
S (%)				
3.68		6	EXRF	84JEN 01
5.02		6	EXRF	84JEN 01
Sb (ug/g)				
5.9			AF	85NAR 02
21.7			RTNA	81NIS 01
22.6			RTNA	81KIB 01
25			HAA	81YAM 01
28.3	1.2		FAA	82MAT 02
31	4		ITNA	81HAM 01
32.2	3.2	11	FAA	83CAR 01
33.2			RTNA	81SLO 01
33.6	2.2		RTNA	82ELS 02
36			ITNA	81SLO 01
38			ICPES	82NYG 01
40	5	35	ITNA	81GLA 02
47.2		11	FAA	83CAR 01
52			PAA	80BER 01
66			ICPES	85NAR 02
Sc (ug/g)				
<	2		DCPES	81CAN 01
2.13	0.07	35	ITNA	81GLA 02
3.1	0.5		RTNA	77MEL 01
Se (ug/g)				
0.85			RTNA	81SLO 01
1			ICPES	81GOU 01
1.3	0.2		RTNA	77MEL 01
1.5	0.1	35	RTNA	81GLA 01
1.7	0.3		HAA	85CUT 01
5			ICPES	80FLO 01
8			ICPES	82NYG 01
9.8			ICPES	85NAR 02
24			AF	85NAR 02
Se(IV) (ug/g)				
0.02	0.01		HAA	85CUT 01
Se(VI) (ug/g)				
0.08	0.03		HAA	85CUT 01

Conc	Uncer	Com	Method	Reference
Si (%)				
15.4		6	EXRF	84JEN 01
19.7		6	EXRF	84JEN 01
22.2	1.1	11	ICPES	84NAD 01
23.6			AA	83FAR 01
23.7	1.9		DCPES	81CAN 01
27.2728	2.1949		ITNA	85PEN 01
Sm (ug/g)				
1.22	0.14	4	TCGS	85GLA 05
1.26	0.14	4	TCGS	85GLA 05
Sn (ug/g)				
6			AF	85NAR 02
313	9		FAA	82MAT 02
366			FAA	84LON 01
416	15		RTNA	83BER 01
Sr (ug/g)				
747	38	11	ICPES	84NAD 01
814	43	11	ICPES	84NAD 01
851	13		PAA	80KAT 01
862			PAA	80BER 01
870		6	XRF	78TAK 01
910			EXRF	83MAH 03
960		6	EXRF	84JEN 01
1033		6	XRF	78TAK 01
1200			ICPES	80FLO 01
1750		6	EXRF	84JEN 01
Ta (ng/g)				
220	20	35	ITNA	81GLA 02
Te (ug/g)				
4.6			IDMS	83LOS 01
Th (ug/g)				
1.8			PAA	80BER 01
19		6	EXRF	84JEN 01
34		6	EXRF	84JEN 01

TABLE 1645-2: INDIVIDUAL DATA FOR NBS SRM 1645 (cont.)

Conc	Uncer	Com	Method	Reference
Ti (ug/g)				
184		11	ICPES	84WOL 01
245		11	ICPES	84WOL 01
258		6	XRF	78TAK 01
370		11	ICPES	84NAD 01
490		6	XRF	78TAK 01
491	14		ICPES	84HIR 01
590		11	ICPES	84NAD 01
597		11	ICPES	84WOL 01
600	100		DCPES	81CAN 01
642	13		PAA	80KAT 01
700			AA	82MAT 04
825			PAA	80BER 01
Tl (ug/g)				
<	10		DCPES	81CAN 01
1.9			PAA	80BER 01
5.4	0.5		FAA	83CAR 01
U (ug/g)				
0.8	0.02		RTNA	78DER 01
1.11	0.03		DNA	85GAU 04
1.11	0.05		DNA	86GAU 01
1.16			DNA	84GLA 02
1.17	0.01		DNA	85GLA 04
1.3			DNA	84GLA 11
1.4			PAA	80BER 01
V (ug/g)				
17.9		11	FAA	83CAR 01
21.6	1.5	11	FAA	83CAR 01
22			ICPES	84SUN 01
24			ICPES	84SUN 01
24.1	6.5		ICPES	82SCH 04
25			ICPES	80FLO 01
26			WXRF	84ZSO 01
27			ICPES	84SUN 01
29	6	35	ITNA	81GLA 02
29.6		11	ICPES	84WOL 01
30.8		11	ICPES	84WOL 01
31	0.8		ICPES	84HIR 01
34	3		DCPES	81CAN 01
39.6		11	ICPES	84WOL 01
W (ug/g)				
54	9		DCPES	81CAN 01

Conc	Uncer	Com	Method	Reference
Y (ug/g)				
<	7		DCPES	81CAN 01
7			ICPES	80FLO 01
7.4	0.3		PAA	80KAT 01
Yb (ng/g)				
<	2000		DCPES	81CAN 01
600			ICPES	80FLO 01
Zn (ug/g)				
1254			EXRF	83MAH 03
1392	10		ICPES	84HIR 01
1414	84		RTNA	77MEL 01
1480		6	XRF	78TAK 01
1500	100		DCPES	81CAN 01
1540	67		PAA	80KAT 01
1570	57	11	ICPES	84NAD 01
1587			ICPES	80FLO 01
1610	40		AA	77YAN 01
1640		6	XRF	78TAK 01
1640	40		AA	81FAR 01
1660		11	VV	84WOL 01
1695			WXRF	84ZSO 01
1700			ICPES	84SUN 01
1713	145		ICPES	82SCH 04
1720	361		AE-AF	82GOL 01
1726		11	VV	84WOL 01
1730			PAA	80BER 01
1735	37	11	ICPES	84NAD 01
1737		6	AF	84NAR 02
1750		6	AF	84NAR 02
1750	19	11	AA	82SAK 01
1767	177		AA	83CAR 01
1768	158		ICPES	84SOB 01
1785			ICPES	85NAR 02
1794			AF	85NAR 02
1794		6	XRF	78TAK 01
1795	25	11	AA	82SAK 01
1800			ICPES	84SUN 01
1800			ICPES	84SUN 01
1806	37		RTNA	79DER 01
1810		6	EXRF	84JEN 01
1878		11	VV	84WOL 01
3240		6	EXRF	84JEN 01
Zr (ug/g)				
<	55		EXRF	83MAH 03
55	3		PAA	80KAT 01
57	6		DCPES	81CAN 01
71			PAA	80BER 01

TABLE 1646-1: COMPILED DATA FOR NBS SRM 1646 ESTUARINE SEDIMENT (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	NAA		ICPES		OTHER METHODS		
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean	(n)	Mean	(n)	Method
Ag	ng/g	---	88	(1)	---	---	---		---		88	(1)	AA
Al	%	6.25 ± 0.2	5.54 ± 0.42	(5)	5.4	5.12 - 6.03	5.98	(2)	5.12	(1)	5.3	(2)	DCPES
As	ug/g	11.6 ± 1.3	11.1 ± 0.6	(3)	11.1	10.5 - 11.7	11.1	(2)	---		11.1	(1)	DCPES
B	ug/g	---	82.5	(2)	---	81 - 84	---		---		82.5	(2)	TCGS
Ba	ug/g	---	409	(2)	---	370 - 448	409	(2)	---		---		
Be	ug/g	1.5	1.5	(1)	---	---	---		1.5	(1)	---		
Br	ug/g	---	117	(2)	---	112 - 122	117	(2)	---		---		
Ca	ug/g	8300 ± 300	8440	(2)	---	8120 - 8760	8760	(1)	---		8120	(1)	AA
Cd	ng/g	360 ± 70	325 ± 60	(3)	355	260 - 360	---		---		360	(1)	IDMS
Cd	ng/g	---	---		---	---	---		---		260	(1)	AAC
Cd	ng/g	---	---		---	---	---		---		355	(1)	AA
Ce	ug/g	80	80 ± 4	(4)	77.2	76 - 84	81 ± 3	(3)	76	(1)	---		
Cl	%	---	1.38	(1)	---	---	1.38	(1)	---		---		
Co	ug/g	10.5 ± 1.3	9.1 ± 1.6	(5)	8.0	7.8 - 11	9.4 ± 1.6	(4)	7.8	(1)	---		
Cr	ug/g	76 ± 3	76 ± 4	(7)	75	72 - 84	79 ± 4	(4)	72	(1)	73	(2)	DCPES
Cs	ug/g	3.7	3.69 ± 0.10	(5)	3.7	3.6 - 3.85	3.69 ± 0.10	(5)	---		---		
Cu	ug/g	18 ± 3	17 ± 2	(4)	16.8	13.3 - 19	---		19	(1)	17.8	(1)	IDMS
Cu	ug/g	---	---		---	---	---		---		16.8	(1)	ASV
Cu	ug/g	---	---		---	---	---		---		13.3	(1)	AAC
Dy	ug/g	---	4.3 ± 1.6	(3)	4.04	2.8 - 5.98	5.98	(1)	4.04	(1)	2.8	(1)	DCPES
Er	ug/g	---	2.41	(1)	---	---	---		2.41	(1)	---		
Eu	ug/g	1.5	1.44 ± 0.16	(3)	1.36	1.34 - 1.62	1.48	(2)	1.36	(1)	---		
Fe	%	3.35 ± 0.1	3.22 ± 0.28	(6)	3.02	2.9 - 3.52	3.46 ± 0.07	(3)	3.02	(1)	2.95	(2)	DCPES
Ga	ug/g	---	19	(1)	---	---	---		---		19	(1)	DCPES
Gd	ug/g	---	4.5 ± 0.7	(3)	4.6	3.7 - 5.09	---		5.09	(1)	4.15	(2)	TCGS
Ge	ug/g	1.4	---		---	---	---		---		---		
Hf	ug/g	---	11.2	(2)	---	11.1 - 11.2	11.2	(2)	---		---		
Hg	ng/g	63 ± 12	---		---	---	---		---		---		
Ho	ug/g	---	0.84	(1)	---	---	---		0.84	(1)	---		
I	ug/g	---	34.2	(2)	---	32.5 - 36	34.2	(2)	---		---		
K	%	1.4	1.83	(2)	---	1.43 - 2.23	1.83	(2)	---		---		
La	ug/g	---	37 ± 2	(3)	36	35.7 - 38.9	38.9	(1)	35.7	(1)	36	(1)	DCPES
Li	ug/g	49	46	(1)	---	---	---		---		46	(1)	AA
Lu	ng/g	---	380 ± 60	(3)	370	320 - 444	407	(2)	320	(1)	---		
Mg	%	1.09 ± 0.08	0.970 ± 0.001	(3)	0.97	0.969 - 0.970	0.97	(1)	0.969	(1)	0.97	(1)	AA

TABLE 1646-1: COMPILED DATA FOR NBS SRM 1646 ESTUARINE SEDIMENT (cont.)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD	(n)	MEDIAN	RANGE	NAA Mean ± SD	(n)	ICPES Mean	(n)	OTHER METHODS Mean	(n)	Method
Mn	ug/g	375 ± 20	330 ± 46	(6)	328	270 - 385	368 ± 15	(3)	328	(1)	275	(2)	DCPES
Mo	ug/g	2	14	(2)	---	9 - 19	---		9	(1)	19	(1)	DCPES
Na	%	2	2.04 ± 0.19	(3)	2.1	1.82 - 2.19	2.04 ± 0.19	(3)	---		---		
Nb	ug/g	---	53	(1)	---	---	---		---		53	(1)	DCPES
Nd	ug/g	---	36 ± 4	(3)	34.7	32.6 - 40	36.3	(2)	34.7	(1)	---		
Ni	ug/g	32 ± 3	31.7 ± 0.9	(4)	31	31 - 32.8	---		32	(1)	31	(2)	DCPES
Ni	ug/g	---	---		---	---	---		---		32.8	(1)	AAC
P	ug/g	540 ± 5	480	(2)	---	433 - 529.6	---		433	(1)	529.6	(1)	DCPES
Pb	ug/g	28.2 ± 1.8	27.8 ± 1.2	(3)	28	26.5 - 29	---		---		29	(1)	AAC
Pb	ug/g	---	---		---	---	---		---		26.5	(1)	ASV
Pb	ug/g	---	---		---	---	---		---		28	(1)	AA
Pr	ug/g	---	8.56	(1)	---	---	---		8.56	(1)	---		
Rb	ug/g	87	87	(2)	---	83 - 91.5	87.2	(2)	---		---		
S	%	0.96	---		---	---	---		---		---		
Sb	ng/g	400	790 ± 160	(3)	610	610 - 910	790 ± 160	(3)	---		---		
Sc	ug/g	10.8	10.8 ± 0.4	(6)	10.7	10.3 - 11.56	10.8 ± 0.4	(6)	---		---		
Se	ng/g	600	530 ± 90	(3)	580	430 - 590	---		590	(1)	580	(1)	GC
Se	ng/g	---	---		---	---	---		---		430	(1)	AA
Se(IV)	ng/g	---	1	(1)	---	---	---		---		1	(1)	AA
Se(VI)	ng/g	---	40	(1)	---	---	---		---		40	(1)	AA
Si	%	31.0	30.0	(2)	---	30.0 - 30.0	---		---		30	(2)	DCPES
Sm	ug/g	---	6.4 ± 0.3	(4)	6.21	6.2 - 6.8	6.52	(1)	6.21	(1)	6.5	(2)	TCGS
Sr	ug/g	---	220	(1)	---	---	220	(1)	---		---		
Ta	ug/g	---	1.00	(2)	---	0.94 - 1.07	1.00	(2)	---		---		
Tb	ug/g	---	0.95	(2)	---	0.92 - 0.98	0.95	(2)	---		---		
Te	ng/g	500	---		---	---	---		---		---		
Th	ug/g	10	10.0 ± 0.6	(5)	10.3	9.2 - 10.7	10.0 ± 0.6	(5)	---		---		
Ti	ug/g	5100	4200 ± 800	(5)	3750	3600 - 5223	5010	(2)	3750	(1)	3600	(2)	DCPES
Tl	ug/g	0.5	16	(1)	---	---	---		---		16	(1)	DCPES
U	ug/g	---	2.99 ± 0.06	(5)	3.00	2.9 - 3.07	2.99 ± 0.06	(5)	---		---		
V	ug/g	94 ± 1	86 ± 3	(5)	85	82.3 - 89	82.6	(2)	85	(1)	89	(2)	DCPES
Y	ug/g	---	18.4	(2)	---	17 - 19.9	---		19.9	(1)	17	(1)	DCPES
Yb	ug/g	---	2.6 ± 0.6	(4)	2.2	2.12 - 3.4	2.98	(2)	2.12	(1)	2.2	(1)	DCPES
Zn	ug/g	138 ± 6	124 ± 14	(4)	120	107 - 139	---		107	(1)	125	(2)	DCPES
Zn	ug/g	---	---		---	---	---		---		139	(1)	AA
Zr	ug/g	---	335	(2)	---	270 - 400	400	(1)	---		270	(1)	DCPES

TABLE 1646-2: INDIVIDUAL DATA FOR NBS SRM 1646 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ag (ng/g)				
88	8		FAA	83BLO 01
Al (%)				
5.12	0.17		ICPES	84HIR 01
5.2	0.12		DCPES	81CAN 01
5.4	0.2		DCPES	82SIN 01
5.93	0.3		ITNA	85SUN 01
6.03	0.2		ITNA	85HOL 01
As (ug/g)				
10.5	0.9		ITNA	85HOL 01
11.1	0.6		DCPES	84URA 01
11.7	2.5		IENA	85HOL 01
B (ug/g)				
81	3		TCGS	85GAU 04
84	8		TCGS	84GLA 01
Ba (ug/g)				
370			ITNA	84GLA 11
448	50		ITNA	85SUN 01
Be (ug/g)				
1.5	0.14		ICPES	86GAU 01
Br (ug/g)				
112	1		ITNA	85SUN 01
122	2		IENA	85HOL 01
Ca (ug/g)				
8120			AA	85GAU 04
8760	620		ITNA	85SUN 01
Cd (ng/g)				
260			AAC	85GAU 04
355	40		FAA	86GAU 01
360	10		IDMS	84BRO 03
Ce (ug/g)				
76	0.9		ICPES	85JAR 02
77.2	1.6		ITNA	85SUN 01
82			ITNA	84GLA 11
84	8		ITNA	85HOL 01
110	4.1		DCPES	81CAN 01
Cl (%)				
1.383	0.054		ITNA	85SUN 01
Co (ug/g)				
7.8	0.3		ICPES	84HIR 01
8	2		ITNA	85HOL 01
8	2		IENA	85HOL 01
10.6	0.6		ITNA	85SUN 01
11	1		ITNA	84GLA 11
17	3		DCPES	81CAN 01
19	3		DCPES	82SIN 01
Cr (ug/g)				
72	0.3		ICPES	84HIR 01
72	1		DCPES	82SIN 01
74	1		DCPES	81CAN 01
75	1		ITNA	85HOL 01
78.4	3		ITNA	85SUN 01
80			ITNA	84GLA 11
84	5		ITNA	86GAU 01
Cs (ug/g)				
3.6	0.2		ITNA	84GLA 11
3.6	0.4		ITNA	84GLA 02
3.7			ITNA	86GAU 01
3.7	0.6		ITNA	85HOL 01
3.85	0.15		ITNA	85SUN 01
Cu (ug/g)				
13.3	0.6		AAC	85GAU 04
16.8			ASV	83MAD 01
17.8	0.4		IDMS	84BRO 03
19	0.6		ICPES	84HIR 01
31	2.8		DCPES	81CAN 01
Dy (ug/g)				
2.8	0.21		DCPES	81CAN 01
4.04	0.07		ICPES	85JAR 02
5.98	0.23		ITNA	85SUN 01
Er (ug/g)				
2.41	0.04		ICPES	85JAR 02
Eu (ug/g)				
1.34			ITNA	84GLA 11
1.36			ICPES	85JAR 02
1.62	0.17		ITNA	85SUN 01

TABLE 1646-2: INDIVIDUAL DATA FOR NBS SRM 1646 (cont.)

Conc	Uncer	Com	Method	Reference
Fe (%)				
2.9	0.05		DCPES	81CAN 01
3	0.15		DCPES	82SIN 01
3.02	0.04		ICPES	84HIR 01
3.38			ITNA	84GLA 11
3.49	0.1		ITNA	85SUN 01
3.52	0.11		ITNA	85HOL 01
Ga (ug/g)				
19	1.6		DCPES	81CAN 01
Gd (ug/g)				
3.7	0.4	4	TCGS	85GLA 05
4.6	0.8	4	TCGS	85GLA 05
5.09	0.13		ICPES	85JAR 02
Hf (ug/g)				
11.1	0.7		ITNA	85SUN 01
11.2			ITNA	84GLA 11
Ho (ug/g)				
0.84	0.03		ICPES	85JAR 02
I (ug/g)				
32.5	2.9		ITNA	85SUN 01
36	2		IENA	85HOL 01
K (%)				
1.43	0.17		IENA	85HOL 01
2.23	0.25		ITNA	85SUN 01
La (ug/g)				
35.7	0.5		ICPES	85JAR 02
36	0.63		DCPES	81CAN 01
38.9	1.3		ITNA	85SUN 01
Li (ug/g)				
46			AA	85GAU 04
Lu (ng/g)				
320			ICPES	85JAR 02
370			ITNA	84GLA 11
444	18		ITNA	85SUN 01

Conc	Uncer	Com	Method	Reference
Mg (%)				
0.9	0.08		IENA	85HOL 01
0.969	0.015		ICPES	84HIR 01
0.97			AA	85GAU 04
0.97	0.09		ITNA	85SUN 01
Mn (ug/g)				
270	15		DCPES	82SIN 01
280	5		DCPES	81CAN 01
328	3		ICPES	84HIR 01
356	17		IENA	85HOL 01
362	8		ITNA	85HOL 01
385	20		ITNA	85SUN 01
Mo (ug/g)				
9	0.3		ICPES	84HIR 01
19	2.5		DCPES	81CAN 01
Na (%)				
1.82	0.01		IENA	85HOL 01
2.1	0.2		ITNA	85HOL 01
2.19	0.02		ITNA	85SUN 01
Nb (ug/g)				
53	4		DCPES	81CAN 01
Nd (ug/g)				
32.6	9.7		ITNA	85SUN 01
34.7	0.6		ICPES	85JAR 02
40			ITNA	84GLA 11
Ni (ug/g)				
31	1.5		DCPES	81CAN 01
31	5		DCPES	82SIN 01
32	0.3		ICPES	84HIR 01
32.8	1.7		AAC	85GAU 04
P (ug/g)				
433	1		ICPES	84HIR 01
529.6	3.9		DCPES	84URA 01
Pb (ug/g)				
26.5			ASV	83MAD 01
28	4		FAA	86GAU 01
29	1		AAC	85GAU 04

TABLE 1646-2: INDIVIDUAL DATA FOR NBS SRM 1646 (cont.)

Conc	Uncer	Com	Method	Reference
Pr (ug/g)				
8.56	0.19		ICPES	85JAR 02
Rb (ug/g)				
83			ITNA	84GLA 11
91.5	4.6		ITNA	85SUN 01
Sb (ng/g)				
330	80		IENA	85HOL 01
610			ITNA	84GLA 11
850			ITNA	84GLA 02
910	250		ITNA	85SUN 01
Sc (ug/g)				
10.3	0.4		ITNA	84GLA 11
10.4	0.2		ITNA	84GLA 02
10.7	0.6		IENA	85HOL 01
10.9	0.4		ITNA	85HOL 01
11	0.2		ITNA	85SUN 01
11.56	0.06		ITNA	86GAU 01
Se (ng/g)				
430	20		HAA	85CUT 01
580	50		GC	83SIU 01
590	60		ICPES	83SIU 01
Se(IV) (ng/g)				
1	0.6		HAA	85CUT 01
Se(VI) (ng/g)				
40	20		HAA	85CUT 01
Si (%)				
30	0.52		DCPES	81CAN 01
30	1.2		DCPES	82SIN 01
Sm (ug/g)				
6.2	0.6	4	TCGS	85GLA 05
6.21	0.13		ICPES	85JAR 02
6.52	0.19		ITNA	85SUN 01
6.8	0.6	4	TCGS	85GLA 05
Sr (ug/g)				
220	73		ITNA	85SUN 01
Ta (ug/g)				
0.94			ITNA	84GLA 11
1.07	0.16		ITNA	85SUN 01
Tb (ug/g)				
0.92			ITNA	84GLA 11
0.98	0.16		ITNA	85SUN 01
Th (ug/g)				
9.2	0.4		IENA	85HOL 01
9.6			ITNA	84GLA 11
10.3	0.4		ITNA	85SUN 01
10.4	1		ITNA	86GAU 01
10.7			ITNA	85GAU 04
12	0.7		ITNA	85HOL 01
Ti (ug/g)				
3600	100		DCPES	81CAN 01
3600	360		DCPES	82SIN 01
3750	150		ICPES	84HIR 01
4800	200		ITNA	85HOL 01
5223	278		ITNA	85SUN 01
Tl (ug/g)				
16	2.7		DCPES	81CAN 01
U (ug/g)				
2.9			DNA	84GLA 11
2.96	0.09		DNA	85GAU 04
3			DNA	84GLA 02
3.01	0.1		DNA	86GAU 01
3.07	0.48		ITNA	85SUN 01
V (ug/g)				
82.3	3		ITNA	85SUN 01
83	5		ITNA	85HOL 01
85	4.2		ICPES	84HIR 01
89	2.3		DCPES	81CAN 01
89	9		DCPES	82SIN 01
Y (ug/g)				
17	1.4		DCPES	81CAN 01
19.9	0.4		ICPES	85JAR 02

TABLE 1646-2: INDIVIDUAL DATA FOR NBS SRM 1646 (cont.)

Conc	Uncer	Com	Method	Reference
Yb (ug/g)				
2.12	0.02		ICPES	85JAR 02
2.2	0.08		DCPES	81CAN 01
2.56	0.13		ITNA	85SUN 01
3.4			ITNA	84GLA 11
Zn (ug/g)				
107	3		ICPES	84HIR 01
120	8		DCPES	82SIN 01
130	1		DCPES	81CAN 01
139			AA	85GAU 04
Zr (ug/g)				
270	12		DCPES	81CAN 01
400			ITNA	84GLA 11

TABLE 1647-1: COMPILED DATA FOR NBS SRM 1647 PRIORITY POLLUTANT POLYNUCLEAR AROMATIC HYDROCARBONS (IN ACETONITRILE)

COMPOUND	CAS #	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	METHOD
Acenaphthene	83329	mg/L	21.0 ± 0.4	---	---	---	---
Acenaphthylene	208968	mg/L	19.1 ± 0.2	---	---	---	---
Anthracene	120127	mg/L	3.29 ± 0.10	---	---	---	---
Benz[a]anthracene	56553	mg/L	5.03 ± 0.10	---	---	---	---
Benzo[b]fluoranthene	205992	mg/L	5.11 ± 0.10	---	---	---	---
	205992	ug/g	---	2.44 ± 0.13 (5)	2.34	2.34 - 2.65	HPLC
Benzo[k]fluoranthene	207089	mg/L	5.02 ± 0.10	---	---	---	---
	207089	ug/g	---	2.4 ± 0.7 (6)	2.42	1.22 - 3.17	HPLC
Benzo[ghi]perylene	191242	mg/L	4.01 ± 0.10	---	---	---	---
Benzo[a]pyrene	50328	mg/L	5.3 ± 0.1	---	---	---	---
Chrysene	218019	mg/L	4.68 ± 0.10	---	---	---	---
Dibenz[a,h]anthracene	53703	mg/L	3.68 ± 0.10	---	---	---	---
Fluoranthene	206440	mg/L	10.1 ± 0.2	---	---	---	---
Fluorene	86737	mg/L	4.92 ± 0.10	---	---	---	---
Indeno[1,2,3-cd]pyrene	193395	mg/L	4.06 ± 0.10	---	---	---	---
Naphthalene	91203	mg/L	22.5 ± 0.2	---	---	---	---
Perylene	198550	ug/g	---	< 0.1	---	---	HPLC
Phenanthrene	85018	mg/L	5.06 ± 0.10	---	---	---	---
Pyrene	129000	mg/L	9.84 ± 0.10	---	---	---	---

TABLE 1647-2: INDIVIDUAL DATA FOR NBS SRM 1647

Conc	Uncer	Com	Method	Reference
Benzo[b]fluoranthene (ug/g)				
1.04		12	HPLC	85OTT 01
2.34		12	HPLC	85OTT 01
2.34		12	HPLC	85OTT 01
2.39		12	HPLC	85OTT 01
2.47		12	HPLC	85OTT 01
2.65		12	HPLC	85OTT 01
Benzo[k]fluoranthene (ug/g)				
1.22		12	HPLC	85OTT 01
2.04		12	HPLC	85OTT 01
2.42		12	HPLC	85OTT 01
2.42		12	HPLC	85OTT 01
2.86		12	HPLC	85OTT 01
3.17		12	HPLC	85OTT 01
Perylene (ug/g)				
<	0.1		HPLC	85OTT 01

TABLE 1648-1: COMPILED DATA FOR NBS SRM 1648 URBAN PARTICULATE MATTER (revised 3/1/86)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA		NAA		ICPES		OTHER METHODS		
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Mean ± SD	(n)	Method
Ag	ug/g	6	6.1 ± 0.2	(5)	6.18	5.8 - 6.4	6.18	(1)	6.1 ± 0.3	(3)	---		6.0	(1)	XRF
Al	%	3.42 ± 0.11	3.22 ± 0.16	(8)	3.12	3.05 - 3.5	3.18	(2)	3.26 ± 0.19	(4)	3.18	(2)	---		
As	ug/g	115 ± 10	116 ± 3	(11)	117	112 - 119	114 ± 3	(3)	118 ± 1	(4)	116 ± 3	(4)	---		
B	ug/g	---	3000 ?	(2)	---	158 - 6000	---		---		---		158	(1)	TCGS
Ba	ug/g	737	780 ± 40	(5)	774	740 - 840	---		793 ± 50	(3)	774	(1)	757	(1)	XRF
Be	ug/g	---	2.6 ± 0.4	(3)	2.5	2.3 - 3.0	---		---		2.6 ± 0.4	(3)	---		
Br	ug/g	500	506 ± 25	(6)	504	460 - 526	---		503 ± 27	(5)	---		517	(1)	XRF
C	%	---	14.98	(2)	---	14.7 - 15.27	---		---		---		14.7	(1)	CB
Ca	%	---	5.83 ± 0.33	(8)	5.77	5.4 - 6.30	5.8 ± 0.4	(3)	5.8 ± 0.4	(3)	5.77	(1)	6.1	(1)	XRF
Cd	ug/g	75 ± 7	72 ± 2	(13)	72	69 - 75	72 ± 2	(7)	70	(1)	73 ± 2	(4)	70	(1)	XRF
Ce	ug/g	55	55 ± 4	(4)	53	52 - 61	---		53 ± 1	(3)	61	(1)	---		
Cl	ug/g	4500	4760 ± 230	(3)	4890	4500 - 4900	---		4760 ± 230	(3)	---		---		
Co	ug/g	18	17.4 ± 1.8	(7)	17.6	15 - 20	15.2	(1)	17.6 ± 0.4	(3)	18 ± 3	(3)	---		
Cr	ug/g	403 ± 12	397 ± 14	(9)	398	380 - 417	393 ± 20	(3)	407 ± 5	(3)	391 ± 10	(3)	440	(1)	XRF
Cs	ug/g	3	3.5 ± 0.2	(3)	3.4	3.3 - 3.73	---		3.5 ± 0.2	(3)	---		---		
Cu	ug/g	609 ± 27	600 ± 23	(17)	596	570 - 669	591 ± 5	(9)	669	(1)	630 ± 50	(4)	640 ± 60	(3)	XRF
Eu	ug/g	0.8	0.85 ± 0.13	(3)	0.79	0.77 - 1.0	---		0.78	(2)	1.0	(1)	---		
Fe	%	3.91 ± 0.10	3.92 ± 0.24	(15)	3.9	3.43 - 4.50	3.7 ± 0.5	(8)	3.85 ± 0.04	(4)	3.9	(2)	4.00 ± 0.04	(3)	XRF
Ga	ug/g	---	40 ?	(2)	---	8.3 - 72	---		8.3	(1)	72	(1)	---		
Gd	ug/g	---	3.4	(2)	---	3.1 - 3.7	---		---		---		3.4	(2)	TCGS
H	%	---	2.23	(1)	---	---	---		---		---		2.23	(1)	CB
Hf	ug/g	4.4	4.6 ± 0.5	(3)	4.47	4.2 - 5.2	---		4.6 ± 0.5	(3)	---		---		
I	ug/g	20	18 ± 2	(3)	19.2	16 - 20	---		20	(1)	---		16	(1)	XRF
I	ug/g	---	---		---	---	---		---		---		19.2	(1)	ISE
I-129	atom/g	---	1.65	(2)	---	1.5 - 1.8	---		1.8	(1)	---		---		
In	ng/g	1000	980	(1)	---	---	---		980	(1)	---		---		
K	%	1.05 ± 0.01	1.03 ± 0.05	(6)	1.01	0.96 - 1.11	---		1.03 ± 0.06	(5)	---		1.04	(1)	XRF
La	ug/g	42	39 ± 3	(5)	40	35 - 42	---		40 ± 2	(4)	35	(1)	---		
Lu	ng/g	---	34	(1)	---	---	---		34	(1)	---		---		
Mg	ug/g	8000	7930 ± 650	(6)	7600	7200 - 9000	7580 ± 330	(4)	8300	(1)	9000	(1)	---		
Mn	ug/g	860	822 ± 45	(19)	830	740 - 880	816 ± 41	(8)	793 ± 55	(5)	840	(2)	865	(2)	XRF
Mo	ug/g	---	18.2 ± 1.9	(4)	17	17 - 21	---		21	(1)	18	(2)	17	(1)	XRF

TABLE 1648-1: COMPILED DATA FOR NBS SRM 1648 URBAN PARTICULATE MATTER (cont.)

ELE	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	AA	NAA	ICPES	OTHER METHODS		
		Mean ± SD	Mean ± SD	(n)			Mean ± SD (n)	Mean ± SD (n)	Mean ± SD (n)	Mean ± SD (n)		Method
N	%	3.08	3.25	(1)	---	---	---	---	---	3.25	(1)	CB
NH4-N	%	2.01	---		---	---	---	---	---	---		
NO3-N	%	1.07	---		---	---	---	---	---	---		
Na	ug/g	4250 ± 20	4230 ± 260	(4)	4100	4000 - 4600	---	4230 ± 260 (4)	---	---		
Nb	ug/g	---	22	(1)	---	---	---	---	---	22	(1)	XRF
Ni	ug/g	82 ± 3	82 ± 12	(15)	79.5	62 - 105	81 ± 12 (6)	75 (1)	74 ± 10 (4)	91	(2)	XRF
Ni	ug/g	---	---		---	---	---	---	---	84	(1)	VOLT
Pb	ug/g	6550 ± 80	6520 ± 250	(17)	6530	6100 - 7000	6420 ± 180 (9)	---	6710 ± 220 (4)	6660 ± 320	(3)	XRF
Pr	ug/g	---	8.0	(1)	---	---	---	---	8.0 (1)	---		
Rb	ug/g	52	54.5 ± 2.6	(4)	53	52 - 58	---	54 ± 3 (4)	---	---		
S	%	5.0	5.21	(1)	---	---	---	---	---	---		
SO4	%	15.42	---		---	---	---	---	---	---		
Sb	ug/g	45	44 ± 2	(5)	44	41 - 47	---	45 ± 2 (3)	41 (1)	44	(1)	XRF
Sc	ug/g	7	6.70 ± 0.12	(4)	6.6	6.6 - 6.8	---	6.7 ± 0.1 (4)	---	---		
Se	ug/g	27 ± 1	24 ± 2	(6)	24.22	20 - 27	---	25 ± 2 (3)	23 (2)	25	(1)	XRF
Si	%	12.5	13.0 ± 1.0	(6)	13.0	11.5 - 14.7	12.6 ± 0.8 (4)	13 (1)	---	14.7	(1)	XRF
Sm	ug/g	4.4	4.4 ± 0.3	(5)	4.4	4.0 - 4.8	---	4.2 ± 0.2 (3)	---	4.6	(2)	TCGS
Sn	ug/g	---	147	(1)	---	---	---	---	---	147	(1)	XRF
Sr	ug/g	---	207 ± 15	(3)	211	190 - 220	---	220 (1)	---	200	(2)	XRF
Ta	ug/g	---	6.98	(2)	---	6.76 - 7.2	---	6.98 (2)	---	---		
Th	ug/g	7.4	7.6 ± 0.2	(3)	7.5	7.4 - 7.8	---	7.6 ± 0.2 (3)	---	---		
Ti	ug/g	4000	4070 ± 200	(9)	4000	3800 - 4500	4030 ± 120 (3)	4000 ± 500 (4)	4000 (1)	4030	(2)	XRF
U	ug/g	5.5 ± 0.1	5.5 ± 0.3	(4)	5.42	5.2 - 5.9	---	5.5 ± 0.3 (4)	---	---		
V	ug/g	140 ± 3	121 ± 8	(8)	119	106 - 130	---	122 ± 6 (5)	118 ± 12 (3)	---		
W	ug/g	4.8	4.2 ± 0.7	(3)	4.4	3.5 - 4.8	---	4.2 ± 0.7 (3)	---	---		
Y	ug/g	---	5.0	(1)	---	---	---	---	5.0 (1)	---		
Yb	ug/g	---	2.0	(1)	---	---	---	---	2.0 (1)	---		
Zn	ug/g	4760 ± 140	4740 ± 70	(21)	4740	4580 - 4890	4720 ± 70 (10)	4760 ± 60 (4)	4720 ± 40 (4)	4780 ± 120	(3)	XRF
Zr	ug/g	---	169	(1)	---	---	---	---	---	169	(1)	XRF

TABLE 1648-1: COMPILED DATA FOR NBS SRM 1648 URBAN PARTICULATE MATTER (cont.)

COMPOUND	CAS #	UNITS	NBS	CONSENSUS Mean ± SD	(n)	MEDIAN	RANGE	METHOD MEANS Mean (n) Method	Mean (n) Method
Anthracene	120127	ng/g	---	335	(2)	---	310 - 360	310 (1) GC-MS	360 (1) LC
1,2-Benzanthracene	56553	ug/g	---	2.9 ± 0.3	(3)	2.8	2.7 - 3.2	3.0 (2) LC	2.7 (1) GC-MS
Benzo(g,h,i)perylene	191242	ug/g	---	6.15	(2)	---	5.5 - 6.8	6.8 (1) GC-MS	5.5 (1) LC
Benzo-a-pyrene	50328	ug/g	---	3.1 ± 0.4	(3)	3.3	2.6 - 3.4	3.0 (2) LC	3.3 (1) GC-MS
Benzo-e-pyrene	192972	ug/g	---	6.8	(1)	---	---	6.8 (1) GC-MS	
Benzo-k-fluoranthene	207089	ug/g	---	3.35	(2)	---	3.3 - 3.4	3.35 (2) LC	
Chrysene	218019	ug/g	---	6.6	(2)	---	6.6 - 6.6	6.6 (2) LC	
Fluoranthene	206440	ug/g	---	8.0 ± 0.6	(3)	7.9	7.4 - 8.7	8.3 (2) LC	7.4 (1) GC-MS
Indeno(1,2,3-cd)pyrene	193395	ug/g	---	4.7 ± 0.1	(3)	4.7	4.6 - 4.8	4.75 (2) LC	4.6 (1) GC-MS
Perylene	198550	ng/g	---	620 ± 90	(3)	650	520 - 690	670 (2) LC	520 (1) GC-MS
Phenanthrene	85018	ug/g	---	4.7	(2)	---	4.6 - 4.8	4.8 (1) GC-MS	4.6 (1) LC
Pyrene	129000	ug/g	---	6.8 ± 0.6	(3)	6.8	6.1 - 7.4	6.1 (1) GC-MS	7.1 (2) LC

TABLE 1648-2: COMPILED DATA FOR NBS SRM 1648 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Anthracene (ng/g)				
310			GC-MS	84SIM 03
360	10		LC	84MAY 01
1,2-Benzanthracene (ug/g)				
2.7			GC-MS	84SIM 03
2.8	0.1	44	LC	84MAY 01
3.2	0.1	44	LC	84MAY 01
Benzo(g,h,i)perylene (ug/g)				
5.5	0.8		LC	84MAY 01
6.8			GC-MS	84SIM 03
Benzo-a-pyrene (ug/g)				
2.6	0.2	44	LC	84MAY 01
3.3			GC-MS	84SIM 03
3.4	0.2	44	LC	84MAY 01
Benzo-e-pyrene (ug/g)				
6.8			GC-MS	84SIM 03
Benzo-k-fluoranthene (ug/g)				
3.3	0.1	44	LC	84MAY 01
3.4	0.05	44	LC	84MAY 01
Chrysene (ug/g)				
6.6	0.1	44	LC	84MAY 01
6.6	0.2	44	LC	84MAY 01
Fluoranthene (ug/g)				
7.4			GC-MS	84SIM 03
7.9	0.6	44	LC	84MAY 01
8.7	0.4	44	LC	84MAY 01
Indeno(1,2,3-cd)pyrene (ug/g)				
4.6			GC-MS	84SIM 03
4.7	0.2	44	LC	84MAY 01
4.8	0.2	44	LC	84MAY 01
Perylene (ng/g)				
520			GC-MS	84SIM 03
650	20	44	LC	84MAY 01
690	20	44	LC	84MAY 01
Phenanthrene (ug/g)				
4.6	0.3		LC	84MAY 01
4.8			GC-MS	84SIM 03
Pyrene (ug/g)				
6.1			GC-MS	84SIM 03
6.8	0.2	44	LC	84MAY 01
7.4	0.2	44	LC	84MAY 01
Ag (ug/g)				
5.8	0.9		IENA	84GLA 07
6	1	D	XRF	79GIA 03
6	1		XRF	77GIA 02
6.18			FAA	83BLO 01
6.2			NAA	83BLO 01
6.4	0.5		ITNA	79GRE 01
Al (%)				
3.05	0.03		AA	81FRA 01
3.05	0.17		ICPES	84JEN 02
3.1	0.1		ITNA	84GLA 07
3.12	0.2	35	ITNA	81GLA 03
3.3			ICPES	80FLO 01
3.3			ITNA	84TU 03
3.3	0.45		AA	81FAR 01
3.5	0.1		ITNA	79GRE 01
As (ug/g)				
104	10		ICPES	84JEN 02
112			ICPES	80FLO 01
112	2		AA	83BYR 01
113	12		FAA	83LOV 01
117			ICPES	82NYG 01
117			HAA	84YAM 01
117	5		ITNA	79GRE 01
117	5		ITNA	84GLA 07
117	6	11	ICPES	84SCH 03
119		35	NAA	81GLA 03
119	2		IENA	84GLA 07
119	2	11	ICPES	84SCH 03
B (ug/g)				
158	15		TCGS	84GLA 01
6000	170		UU	81FRA 01

TABLE 1648-2: COMPILED DATA FOR NBS SRM 1648 (cont.)

Conc	Uncer	Com	Method	Reference
Ba (ug/g)				
740	60		ITNA	79GRE 01
757	35	D	XRF	79GIA 03
757	35		XRF	77GIA 02
774			ICPES	80FLO 01
800	10	5	ITNA	84GLA 07
840	40		IENA	84GLA 07
980	100	5	ITNA	84GLA 07
Be (ug/g)				
2.3	0.2	11	ICPES	84SCH 03
2.5	0.2	11	ICPES	84SCH 03
3			ICPES	80FLO 01
Br (ug/g)				
460	15	5	IENA	84GLA 07
500	30		ITNA	79GRE 01
504	14	5	IENA	84GLA 07
517	14	D	XRF	79GIA 03
517	14		XRF	77GIA 02
526	24	35	ITNA	81GLA 03
526	25		ITNA	84GLA 07
C (%)				
14.7	0.3		CB	84GLA 07
15.27	0.15		UU	81FRA 01
Ca (%)				
5.4	0.3		IENA	84GLA 07
5.5	0.4		AA	82GLA 02
5.6	0.4		AA	84GLA 07
5.77	0.38		ICPES	84JEN 02
5.8	0.5		ITNA	79GRE 01
6.1	0.04		EXRF	78PEL 01
6.18	0.23		AA	81FAR 01
6.3	0.3		ITNA	84GLA 07
Cd (ug/g)				
64	7		AA	82GLA 02
69	4		FAA	81FAR 01
70	2		XRF	77GIA 02
70	2	D	XRF	79GIA 03
70	6		ITNA	79GRE 01
71	2	11	ICPES	84SCH 03
72		11	AA	82YAM 01
72		11	AA	82YAM 01
72		11	AA	82YAM 01

Conc	Uncer	Com	Method	Reference
Cd (ug/g) cont.				
72		11	AA	82YAM 01
72	1	11	ICPES	84SCH 03
73			ICPES	80FLO 01
74	2		AA	83BYR 01
75	7		AA	84GLA 07
75	8		ICPES	84JEN 02
105	9		AA	81FRA 01
Ce (ug/g)				
52	5		IENA	84GLA 07
53	2		ITNA	84GLA 07
54	3		ITNA	79GRE 01
61			ICPES	80FLO 01
Cl (ug/g)				
500	60	35	ITNA	81GLA 03
4500	200		ITNA	79GRE 01
4890	80		ITNA	84GLA 07
4900			ITNA	84TU 03
Co (ug/g)				
15	3		ICPES	84JEN 02
15.2	0.9		AA	81FRA 01
17.2	0.6		ITNA	84GLA 07
17.6	0.5		ITNA	79GRE 01
18	1		IENA	84GLA 07
19	2	11	ICPES	84SCH 03
20	3	11	ICPES	84SCH 03
28			ICPES	80FLO 01
42	7	35	ITNA	81GLA 03
Cr (ug/g)				
173	27		FAA	81FAR 01
380	21		ICPES	84JEN 02
380	40		AA	84GLA 07
383			AA	82GLA 02
396	6	11	ICPES	84SCH 03
398			ICPES	80FLO 01
402	10		ITNA	79GRE 01
410	8		ITNA	84GLA 07
410	50	35	ITNA	81GLA 03
417	16		AA	81FRA 01
440	10		EXRF	78PEL 01
560	11		UU	81FRA 01
580	50		UU	81FRA 01

TABLE 1648-2: COMPILED DATA FOR NBS SRM 1648 (cont.)

Conc	Uncer	Com	Method	Reference
Cs (ug/g)				
3.3	0.2		IENA	84GLA 07
3.4	0.2		ITNA	79GRE 01
3.73	0.29		ITNA	84GLA 07
Cu (ug/g)				
570	44		UU	81FRA 01
581	16		XRF	77GIA 02
585		11	AA	82YAM 01
586	11		AA	83BYR 01
586	22		FAA	81FAR 01
589	12		AA	81FRA 01
590		11	AA	82YAM 01
590		11	AA	82YAM 01
595		11	AA	82YAM 01
596	24		AA	82GLA 02
598			ICPES	80FLO 01
600	30		AA	84GLA 07
603	7	11	ICPES	84SCH 03
609	29	11	ICPES	84SCH 03
610	18		UU	81FRA 01
640	60		EXRF	81KIN 01
669			ITNA	84TU 03
695	35		ICPES	84JEN 02
700	100		EXRF	78PEL 01
Eu (ug/g)				
0.77	0.03		ITNA	84GLA 07
0.79	0.08		ITNA	79GRE 01
1			ICPES	80FLO 01
Fe (%)				
3.0		11	AA	82YAM 01
3.05		11	AA	82YAM 01
3.43	0.05		AA	81FRA 01
3.7			AA	82GLA 02
3.7	0.25		ICPES	84JEN 02
3.8	0.5	35	ITNA	81GLA 03
3.84	0.08		ITNA	79GRE 01
3.86	0.06		ITNA	84GLA 07
3.9		11	AA	82YAM 01
3.9		11	AA	82YAM 01
3.9	0.1		IENA	84GLA 07
3.96	0.037		EXRF	78PEL 01
4.0	0.1		EXRF	81KIN 01
4.05	0.1		XRF	77GIA 02
4.05	0.1	D	XRF	79GIA 03
4.1			ICPES	80FLO 01
4.2	0.4		AA	84GLA 07
4.5	0.23		AA	81FAR 01
5.45	0.32		UU	81FRA 01
5.65	0.14		UU	81FRA 01
Ga (ug/g)				
8.3	0.4		IENA	84GLA 07
72			ICPES	80FLO 01
Gd (ug/g)				
3.1	0.6	4	TCGS	85GLA 05
3.7	0.4	4	TCGS	85GLA 05
H (%)				
2.23	0.04		CB	84GLA 07
Hf (ug/g)				
4.2	0.3		ITNA	79GRE 01
4.47	0.07		ITNA	84GLA 07
5.2	0.4		IENA	84GLA 07
I (ug/g)				
16	2		XRF	77GIA 02
16	2	D	XRF	79GIA 03
19.2	0.3		ISE	85COE 01
20	5		ITNA	79GRE 01
I-129 (ATOM/G)				
1.5		38	UU	83BPN 01
1.8	0.6	38	RTNA	83LUT 01
In (ng/g)				
980	70		ITNA	79GRE 01
K (%)				
0.96	0.12		ITNA	84GLA 07
0.99	0.11		ITNA	79GRE 01
1.01			ITNA	84TU 03
1.04	0.02		EXRF	78PEL 01
1.07	0.02		IENA	84GLA 07
1.11	0.08	35	ITNA	81GLA 03
La (ug/g)				
35			ICPES	80FLO 01
38	3	35	ITNA	81GLA 03
40	2		ITNA	84GLA 07
42	2		ITNA	79GRE 01
42	5		IENA	84GLA 07

TABLE 1648-2: COMPILED DATA FOR NBS SRM 1648 (cont.)

Conc	Uncer	Com	Method	Reference
Lu (ng/g)				
34	3		ITNA	84GLA 07
Mg (ug/g)				
5500			ITNA	84TU 03
7200	600		AA	82GLA 02
7500	400		AA	84GLA 07
7600	400		AA	81FAR 01
8000	130		AA	81FRA 01
8300	800		ITNA	79GRE 01
9000			ICPES	80FLO 01
Mn (ug/g)				
740	30		IENA	84GLA 07
747	10		ITNA	84GLA 07
770		11	AA	82YAM 01
770		11	AA	82YAM 01
790	20		ITNA	79GRE 01
790	80		AA	84GLA 07
805	4		AA	81FRA 01
810	40	35	ITNA	81GLA 03
810	60		AA	81FAR 01
830	40		ICPES	84JEN 02
840	85		UU	81FRA 01
850		11	AA	82YAM 01
851			ICPES	80FLO 01
852		11	AA	82YAM 01
860	20		EXRF	81KIN 01
870	30		EXRF	78PEL 01
877			ITNA	84TU 03
880	19		UU	81FRA 01
880	80		AA	82GLA 02
961	34		XRF	77GIA 02
961	34	D	XRF	79GIA 03
Mo (ug/g)				
17	2		XRF	77GIA 02
17	2	11	ICPES	84SCH 03
18	1	11	ICPES	84SCH 03
21	2		IENA	84GLA 07
N (%)				
3.25	0.04		CB	84GLA 07
Na (ug/g)				
4000	200		ITNA	79GRE 01
4100			ITNA	84TU 03
4220	120	5	ITNA	84GLA 07
4600	200	5	ITNA	84GLA 07
5500	1500	35	ITNA	81GLA 03

Conc	Uncer	Com	Method	Reference
Nb (ug/g)				
22	3		XRF	77GIA 02
Ni (ug/g)				
62	6	11	ICPES	84SCH 03
72	15		AA	82GLA 02
74	5		ICPES	84JEN 02
74.2		11	AA	82YAM 01
75		11	AA	82YAM 01
75	4		IENA	84GLA 07
77	1	11	ICPES	84SCH 03
79.5		11	AA	82YAM 01
80.5		11	AA	82YAM 01
83	4		EXRF	78PEL 01
84			VOLT	84BRA 01
85			ICPES	80FLO 01
99	13		XRF	77GIA 02
100	7		UU	81FRA 01
105	21		AA	81FRA 01
Pb (ug/g)				
6100	200		AA	82GLA 02
6200	810		UU	81FRA 01
6210	85		FAA	81FAR 01
6300	100		XRF	77GIA 02
6300	300		AA	84GLA 07
6400	45		AA	81FRA 01
6510		11	AA	82YAM 01
6530		11	AA	82YAM 01
6530	120	11	ICPES	84SCH 03
6550		11	AA	82YAM 01
6550	190	11	ICPES	84SCH 03
6560	100		AA	83BYR 01
6630		11	AA	82YAM 01
6760	70		ICPES	84JEN 02
6780	60		EXRF	78PEL 01
6900	200		EXRF	81KIN 01
7000			ICPES	80FLO 01
Pr (ug/g)				
8			ICPES	80FLO 01
Rb (ug/g)				
52	9		ITNA	79GRE 01
53	5		ITNA	84GLA 07
55	6	35	ITNA	81GLA 03
58	2		IENA	84GLA 07

TABLE 1648-2: COMPILED DATA FOR NBS SRM 1648 (cont.)

Conc	Uncer	Com	Method	Reference
S (%)				
5.21	0.06		UU	81FRA 01
Sb (ug/g)				
41			ICPES	82NYG 01
44	3		XRF	77GIA 02
44	3	D	XRF	79GIA 03
44	6		ITNA	84GLA 02
45	3		ITNA	79GRE 01
47	2		ITNA	84GLA 07
Sc (ug/g)				
6.6	0.2		ITNA	79GRE 01
6.6	0.6		ITNA	84GLA 02
6.8		35	ITNA	81GLA 03
6.8	0.3		ITNA	84GLA 07
Se (ug/g)				
4			ICPES	80FLO 01
20	6		ICPES	84JEN 02
23.1	0.2	35	RTNA	81GLA 01
24.22	0.25		RTNA	84DEL 01
25	4		XRF	77GIA 02
25	4	D	XRF	79GIA 03
26			ICPES	82NYG 01
27	2		ITNA	79GRE 01
Si (%)				
11.5	2		AA	82GLA 02
12.63	0.47		AA	81FRA 01
13	1.1		IENA	84GLA 07
13	2		AA	84GLA 07
13.3	1.1		AA	83FAR 01
14.7	0.3		EXRF	78PEL 01
Sm (ug/g)				
4	0.4		ITNA	79GRE 01
4.2	0.4	35	ITNA	81GLA 03
4.4	0.3		ITNA	84GLA 07
4.4	0.4	4	TCGS	85GLA 05
4.8	0.4	4	TCGS	85GLA 05
Sn (ug/g)				
147	4		XRF	77GIA 02

Conc	Uncer	Com	Method	Reference
Sr (ug/g)				
190	10		EXRF	78PEL 01
211	6		XRF	77GIA 02
220	10		IENA	84GLA 07
450			ICPES	80FLO 01
Ta (ug/g)				
6.76	0.17		ITNA	84GLA 07
7.2	0.4		IENA	84GLA 07
Th (ug/g)				
7.4	0.3		ITNA	79GRE 01
7.5	0.5		ITNA	84GLA 07
7.8	0.4		IENA	84GLA 07
Ti (ug/g)				
3300			ITNA	84TU 03
3800	200		EXRF	81KIN 01
3900	800		AA	81FRA 01
4000			ICPES	80FLO 01
4000	200		ITNA	79GRE 01
4000	200		ITNA	84GLA 07
4100	300		AA	84GLA 07
4100	400		AA	82GLA 02
4260	30		EXRF	78PEL 01
4500	400		IENA	84GLA 07
9700		35	NAA	81GLA 03
U (ug/g)				
5.2	0.6		DNA	85GAU 04
5.42	0.2		DNA	84GLA 07
5.6	0.05		IENA	84GLA 07
5.9			DNA	84GLA 02
V (ug/g)				
106			ICPES	80FLO 01
116	4		ITNA	84GLA 07
116	19	35	ITNA	81GLA 03
119	9	11	ICPES	84SCH 03
123	12		IENA	84GLA 07
127			ITNA	84TU 03
130	2	11	ICPES	84SCH 03
130	7		ITNA	79GRE 01

TABLE 1648-2: COMPILED DATA FOR NBS SRM 1648 (cont.)

Conc	Uncer	Com	Method	Reference
W (ug/g)				
3.5		35	RENA	81GLA 03
4.4	2.8		IENA	84GLA 07
4.8	0.6		ITNA	79GRE 01
Y (ug/g)				
5			ICPES	80FLO 01
Yb (ug/g)				
2			ICPES	80FLO 01
Zn (ug/g)				
4300	550		UU	81FRA 01
4400	60		UU	81FRA 01
4580	160		AA	81FAR 01
4650		11	AA	82YAM 01
4650	150		EXRF	78PEL 01
4670	35		ICPES	84JEN 02
4670	70		AA	83BYR 01
4700		11	AA	82YAM 01
4700		11	AA	82YAM 01
4700			ICPES	80FLO 01
4700	200		ITNA	79GRE 01
4740	30		AA	80EPS 01
4740	130		IENA	84GLA 07
4750		11	AA	82YAM 01
4750	50		ITNA	84GLA 07
4760	70	11	ICPES	84SCH 03
4760	110	11	ICPES	84SCH 03
4800			AA	82GLA 02
4800	60		AA	81FRA 01
4800	100		EXRF	81KIN 01
4800	300		AA	84GLA 07
4850	240	35	ITNA	81GLA 03
4890	130	D	XRF	79GIA 03
4890	130		XRF	77GIA 02
Zr (ug/g)				
169	8		XRF	77GIA 02

TABLE 1649-1: COMPILED DATA FOR NBS SRM 1649 URBAN DUST/ ORGANICS (revised 3/1/86)

COMPOUND	CAS #	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	METHOD MEANS Mean ± SD (n) Method
Anthracene	120127	ng/g	---	500 (1)	---	---	500 (1) GC-MS
Benz[a]anthracene	56553	ug/g	2.6 ± 0.3	2.7 ± 0.3 (6)	2.7	2.4 - 3.3	2.63 ± 0.21 (3) LC
	56553	ug/g	---	---	---	---	3.05 (2) GC-MS
	56553	ug/g	---	---	---	---	2.4 (1) GC
Benzo[b]fluoranthene	205992	ug/g	6.2	6.1 (2)	---	6.0 - 6.2	6.1 (2) LC
Benzo[k]fluoranthene	207089	ug/g	2	2.03 ± 0.06 (3)	2.0	2.0 - 2.1	2.03 ± 0.06 (3) LC
Benzo[ghi]perylene	191242	ug/g	4.5 ± 1.1	4.6 ± 0.5 (6)	4.4	3.9 - 5.2	4.7 (1) GC
	191242	ug/g	---	---	---	---	4.7 (2) GC-MS
	191242	ug/g	---	---	---	---	4.4 ± 0.7 (3) LC
Benzo[a]pyrene	50328	ug/g	2.9 ± 0.5	2.6 ± 0.3 (6)	2.6	2.2 - 3.0	2.53 ± 0.12 (3) LC
	50328	ug/g	---	---	---	---	2.5 (2) GC-MS
	50328	ug/g	---	---	---	---	3.0 (1) GC
Benzo[e]pyrene	192972	ug/g	3.3	3.5 ± 0.4 (4)	3.3	3.1 - 3.9	3.35 (2) GC-MS
	192972	ug/g	---	---	---	---	3.3 (1) GC
	192972	ug/g	---	---	---	---	3.9 (1) LC
Chrysene	218019	ug/g	3.6	3.63 ± 0.15 (4)	3.7	3.5 - 4.6	3.8 (1) GC-MS
	218019	ug/g	---	---	---	---	3.57 ± 0.12 (3) LC
	218019	ug/g	---	---	---	---	4.6 (1) GC
Dibenz[a,h]anthracene	53703	ng/g	410	430 (2)	---	410 - 450	430 (2) LC
Fluoranthene	206440	ug/g	7.1 ± 0.5	7.08 ± 0.19 (6)	7.0	6.8 - 7.3	7.3 (1) GC
	206440	ug/g	---	---	---	---	7.15 (2) GC-MS
	206440	ug/g	---	---	---	---	6.97 ± 0.15 (3) LC
Indeno[1,2,3-cd]pryene	193395	ug/g	3.3 ± 0.5	3.52 ± 0.25 (6)	3.4	3.3 - 4.0	3.47 ± 0.12 (3) LC
	193395	ug/g	---	---	---	---	3.7 (2) GC-MS
	193395	ug/g	---	---	---	---	3.3 (1) GC
Perylene	198550	ng/g	760	750 ± 120 (6)	740	570 - 900	730 ± 75 (3) LC
	198550	ng/g	---	---	---	---	735 (2) GC-MS
	198550	ng/g	---	---	---	---	840 (1) GC
Phenanthrene	85018	ug/g	4.5 ± 0.3	4.72 ± 0.18 (4)	4.7	4.5 - 4.9	4.6 (2) LC
	85018	ug/g	---	---	---	---	4.85 (2) GC-MS
Pyrene	129000	ug/g	6.6	6.2 ± 0.5 (6)	6.0	5.8 - 7.2	7.2 (1) GC
	129000	ug/g	---	---	---	---	5.9 (2) GC-MS
	129000	ug/g	---	---	---	---	6.17 ± 0.15 (3) LC
Triphenylene	217594	ug/g	1.7	1.7 (1)	---	---	1.7 (1) LC

TABLE 1649-1: COMPILED DATA FOR NBS SRM 1649 URBAN DUST/ ORGANICS (cont.)
(revised 3/1/86)

ELEMENT	UNITS	NBS	ELEMENT	UNITS	NBS
Ag	ug/g	3.5	La	ug/g	33.3
As	ug/g	67	Mo	ug/g	14
Ba	ug/g	570	Rb	ug/g	47
Br	ug/g	1190	S	%	3.27
Cd	ug/g	18	Sb	ug/g	29.9
Ce	ug/g	51.6	Sc	ug/g	8.73
Cl	ug/g	2820	Se	ug/g	25.6
Co	ug/g	16.4	Sm	ug/g	4.71
Cr	ug/g	211	Sn	ug/g	56
Cs	ug/g	2.85	Th	ug/g	6.63
Eu	ug/g	0.87	U	ug/g	2.65
Fe	%	3.00	W	ug/g	3.8
Hf	ug/g	4.41	Zn	ug/g	1670

TABLE 1649-2: INDIVIDUAL DATA FOR NBS SRM 1649 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Anthracene (ng/g)				
500			GC-MS	84SIM 03
Benz[a]anthracene (ug/g)				
2.4	0.1	44	LC	84MAY 01
2.4	0.1		GC	84MAY 01
2.7	0.1	44	LC	84MAY 01
2.8	0.2	44	LC	84MAY 01
2.8	1.1		GC-MS	85GRE 01
3.3			GC-MS	84SIM 03
Benzo[b]fluoranthene (ug/g)				
6	0.3	44	LC	84MAY 01
6.2	0.3	44	LC	84MAY 01
Benzo[k]fluoranthene (ug/g)				
2	0.1	44	LC	84MAY 01
2	0.1	44	LC	84MAY 01
2.1	0.1	44	LC	84MAY 01
Benzo[ghi]perylene (ug/g)				
3.9	0.8	44	LC	84MAY 01
4.1	0.1	44	LC	84MAY 01
4.4			GC-MS	84SIM 03
4.7	0.2		GC	84MAY 01
5	9		GC-MS	85GRE 01
5.2	0.6	44	LC	84MAY 01
Benzo[a]pyrene (ug/g)				
2.2	1.4		GC-MS	85GRE 01
2.4	0.2	44	LC	84MAY 01
2.6	0.1	44	LC	84MAY 01
2.6	0.4	44	LC	84MAY 01
2.8			GC-MS	84SIM 03
3	0.3		GC	84MAY 01
Benzo[e]pyrene (ug/g)				
3.1	1.8		GC-MS	85GRE 01
3.3	0.2		GC	84MAY 01
3.6			GC-MS	84SIM 03
3.9	0.3		LC	84MAY 01
Chrysene (ug/g)				
3.5	0.1	44	LC	84MAY 01
3.5	0.1	44	LC	84MAY 01
3.7	0.2	44	LC	84MAY 01
3.8	1.1		GC-MS	85GRE 01
4.6	0.2		GC	84MAY 01
Dibenz[a,h]anthracene (ng/g)				
410	70	44	LC	84MAY 01
450	40	44	LC	84MAY 01
Fluoranthene (ug/g)				
6.8	0.4	44	LC	84MAY 01
7			GC-MS	84SIM 03
7	0.5	44	LC	84MAY 01
7.1	0.5	44	LC	84MAY 01
7.3	0.2		GC	84MAY 01
7.3	2.7		GC-MS	85GRE 01
Indeno[1,2,3-cd]pryene (ug/g)				
3.3	0.3		GC	84MAY 01
3.4			GC-MS	84SIM 03
3.4	0.1	44	LC	84MAY 01
3.4	0.4	44	LC	84MAY 01
3.6	0.2	44	LC	84MAY 01
4	9		GC-MS	85GRE 01
Perylene (ng/g)				
570			GC-MS	84SIM 03
650	20	44	LC	84MAY 01
740	50	44	LC	84MAY 01
800	40	44	LC	84MAY 01
840	90		GC	84MAY 01
900	100		GC-MS	85GRE 01
Phenanthrene (ug/g)				
4.5	0.3	44	LC	84MAY 01
4.7	0.1	44	LC	84MAY 01
4.8			GC-MS	84SIM 03
4.9	1.3		GC-MS	85GRE 01
Pyrene (ug/g)				
5.8			GC-MS	84SIM 03
6	0.2	44	LC	84MAY 01
6	2.1		GC-MS	85GRE 01
6.2	0.2	44	LC	84MAY 01
6.3	0.4	44	LC	84MAY 01
7.2	0.2		GC	84MAY 01
Triphenylene (ug/g)				
1.7	0.1		LC	84MAY 01

TABLE 1818-1: COMPILED DATA FOR NBS SRM 1818 CHLORINE IN LUBRICATING BASE OIL (revised 3/1/87)

ELEMENT	UNITS	NBS Mean ± SD
Cl-I	ug/g	29 ± 5
Cl-II	ug/g	63 ± 4
Cl-III	ug/g	78 ± 4
Cl-IV	ug/g	231 ± 6
Cl-V	ug/g	558 ± 11

TABLE 1819-1: COMPILED DATA FOR NBS SRM 1819 SULFUR IN LUBRICATING BASE OIL (revised 3/1/87)

ELEMENT	UNITS	NBS Mean ± SD
S-I	ug/g	299 ± 8
S-II	ug/g	1070 ± 40
S-III	ug/g	2865 ± 70
S-IV	ug/g	6030 ± 130
S-V	%	1.055 ± 0.026

TABLE 1880-1: COMPILED DATA FOR NBS SRMs 1880-1883 CEMENTS (revised 3/1/87)

ELEMENT	UNITS	SRM			
		1880 NBS	1881 NBS	1882 NBS	1883 NBS
Al	%	2.66	2.22	20.4	37.7
B	ug/g	< 100	< 100	---	---
Ba	ug/g	< 100	< 100	---	---
Ca	%	45.14	41.96	26.9	19.9
Cl	ug/g	200	< 100	---	---
Cr	ug/g	< 100	< 100	---	---
F	ug/g	1000	900	---	---
Fe	%	2.03	3.27	11.0	0.056
K	ug/g	7600	9710	1000	80
LOI	%	1.38	2.01	1.58	0.42
Mg	%	1.62	1.58	0.75	0.17
Mn	ug/g	560	1800	---	---
Na	ug/g	2100	300	440	2400
P	ug/g	1260	390	---	---
S	%	1.35	1.46	---	---
Si	%	9.26	10.39	1.59	0.16
Sr	ug/g	510	930	---	---
Ti	ug/g	1400	1400	11000	60
Zn	ug/g	80	80	---	---
Zr	ug/g	< 100	< 100	---	---

TABLE 2661-1: COMPILED DATA FOR NBS SRM 2661 BENZENE ON CHARCOAL (revised 3/1/86)

LEVEL	UNITS	NBS Mean ± SD	CONSENSUS Mean (n)	METHOD
I	ug/tube	14 ± 1	---	---
II	ug/tube	66 ± 3	---	---
III	ug/tube	258 ± 13	---	---
IV	ug/tube	994 ± 30	---	---

TABLE 2661A-1: COMPILED DATA FOR NBS SRM 2661A BENZENE ON CHARCOAL (revised 3/1/86)

LEVEL	UNITS	NBS Mean ± SD	CONSENSUS Mean (n)	METHOD
I	ug/tube	16 ± 1	---	---
II	ug/tube	30 ± 2	31 (1)	GC
III	ug/tube	54 ± 2	57.9 (1)	GC

TABLE 2662-1: COMPILED DATA FOR NBS SRM 2662 M-XYLENE ON CHARCOAL (revised 3/1/86)

LEVEL	UNITS	NBS Mean ± SD	CONSENSUS Mean (n)	METHOD
I	ug/tube	40 ± 2	---	---
II	ug/tube	293 ± 15	---	---
III	mg/tube	1.79 ± 0.09	---	---
IV	mg/tube	8.38 ± 0.38	---	---

TABLE 2663-1: COMPILED DATA FOR NBS SRM 2663 1,4-DIOXANE ON CHARCOAL (revised 3/1/86)

LEVEL	UNITS	NBS Mean ± SD	CONSENSUS Mean (n)	METHOD
I	ug/tube	16 ± 1	---	---
II	ug/tube	112 ± 6	---	---
III	mg/tube	0.996 ± 0.050	0.94 (1)	GC
IV	mg/tube	6.49 ± 0.20	---	---

TABLE 2661A-2: INDIVIDUAL DATA FOR NBS SRM 2661A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Benzene-II (ug/tube)				
31			GC	86GAU 01
Benzene-III (ug/tube)				
57.9			GC	85GAU 04

TABLE 2663-2: INDIVIDUAL DATA FOR NBS SRM 2663 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
1,4-Dioxane-III (mg/tube)				
0.94	0.07		GC	86GAU 01

TABLE 2664-1: COMPILED DATA FOR NBS SRM 2664 ETHYLENE CHLORIDE ON CHARCOAL (revised 3/1/86)

LEVEL	UNITS	NBS Mean ± SD	CONSENSUS Mean (n)	METHOD
I	ug/tube	98 ± 5	100 (1)	GC
II	ug/tube	381 ± 19	---	---
III	mg/tube	1.56 ± 0.08	1.6 (1)	GC
IV	mg/tube	5.8 ± 0.17	---	---

TABLE 2665-1: COMPILED DATA FOR NBS SRM 2665 CHLOROFORM ON CHARCOAL (revised 3/1/86)

LEVEL	UNITS	NBS Mean ± SD	CONSENSUS Mean (n)	METHOD
I	ug/tube	147 ± 7	---	---
II	ug/tube	516 ± 26	510 (1)	GC
III	mg/tube	2.14 ± 0.1	---	---
IV	mg/tube	6.87 ± 0.21	---	---

TABLE 2666-1: COMPILED DATA FOR NBS SRM 2666 TRICHLOROETHYLENE ON CHARCOAL (revised 3/1/86)

LEVEL	UNITS	NBS Mean ± SD	CONSENSUS Mean (n)	METHOD
I	ug/tube	286 ± 14	---	---
II	mg/tube	1.03 ± 0.05	---	---
III	mg/tube	4.09 ± 0.20	5.3 (1)	GC
IV	mg/tube	15.4 ± 0.5	---	---

TABLE 2667-1: COMPILED DATA FOR NBS SRM 2667 CARBON TETRACHLORIDE ON CHARCOAL (revised 3/1/86)

LEVEL	UNITS	NBS Mean ± SD	CONSENSUS Mean (n)	METHOD
I	ug/tube	33 ± 3	---	---
II	ug/tube	114 ± 6	---	---
III	ug/tube	414 ± 21	580 (1)	GC
IV	mg/tube	1.58 ± 0.05	---	---

TABLE 2664-2: INDIVIDUAL DATA FOR NBS SRM 2664 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ethylene Chloride-I (ug/tube)				
100			GC	86GAU 01
Ethylene Chloride-III (mg/tube)				
1.6			GC	86GAU 01

TABLE 2665-2: INDIVIDUAL DATA FOR NBS SRM 2665 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Chloroform-II (ug/tube)				
510			GC	86GAU 01

TABLE 2666-2: INDIVIDUAL DATA FOR NBS SRM 2666 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Trichloroethylene-III (mg/tube)				
5.3			GC	86GAU 01

TABLE 2667-2: INDIVIDUAL DATA FOR NBS SRM 2667 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Carbon tetrachloride-III (ug/tube)				
580			GC	86GAU 01

TABLE 2670-1: COMPILED DATA ON NBS SRM 2670 TRACE ELEMENTS IN URINE (revised 3/1/86)

SAMPLE	ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean (n)	METHOD
Entire pool	Dimethylsulfide	ug/L	---	2.73 (1)	GC
	Dimethyltin	ug/L	---	1.04 (1)	GC
	Butyltin	ug/L	---	0.03 (1)	GC
	Ca	mg/L	105 ± 5	---	---
	Cl	g/L	4.4	---	---
	K	g/L	1.5	---	---
	Mg	mg/L	63 ± 3	---	---
	Na	g/L	2.62 ± 0.14	---	---
	SO4	g/L	1.3	---	---
Normal	Al	ug/L	180	---	---
	As	ug/L	15	62 (1)	ICPES
	Be	ug/L	< 0.5	---	---
	Cd	ug/L	0.4	---	---
	Cr	ug/L	13	10 (1)	ICPES
	Cu	ug/L	130 ± 20	135 (1)	ICPES
	Hg	ug/L	20	---	---
	Mn	ug/L	30	24 (1)	ICPES
	Ni	ug/L	70	61 (1)	ICPES
	Pb	ug/L	10	---	---
	Pt	ug/L	< 10	---	---
	Se	ug/L	30 ± 8	37 (1)	ICPES
Elevated	Al	ug/L	180	---	---
	As	ug/L	480 ± 100	504 (1)	ICPES
	Be	ug/L	33	---	---
	Cd	ug/L	88 ± 3	85 (1)	ICPES
	Cr	ug/L	85 ± 6	75 (1)	ICPES
	Cu	ug/L	370 ± 30	359 (1)	ICPES
	Hg	ug/L	105 ± 8	---	---
	Mn	ug/L	330	310 (1)	ICPES
	Ni	ug/L	300	257 (1)	ICPES
	Pb	ug/L	109 ± 4	94 (1)	ICPES
	Pt	ug/L	110	---	---
	Se	ug/L	460 ± 30	475 (1)	ICPES

TABLE 2670-2: INDIVIDUAL DATA FOR NBS SRM 2670 Entire Pool (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
(Me)2S2 (ug/L)				
2.73			GC	830LS 02
(Me)2Sn (ug/L)				
1.04			GC	830LS 02
BuSn (ug/L)				
0.03			GC	830LS 02

TABLE 2670N-2: INDIVIDUAL DATA FOR NBS SRM 2670 Normal Level (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
As (ug/L)					Mn (ug/L)				
62	36		ICPES	85KIM 01	24	2.8		ICPES	85KIM 01
Cr (ug/L)					Ni (ug/L)				
10	3.3		ICPES	85KIM 01	61	13		ICPES	85KIM 01
Cu (ug/L)					Se (ug/L)				
135	12		ICPES	85KIM 01	37	31		ICPES	85KIM 01

TABLE 2670E-2: INDIVIDUAL DATA FOR NBS SRM 2670 Elevated Level (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
As (ug/L)					Mn (ug/L)				
504	63		ICPES	85KIM 01	310	6		ICPES	85KIM 01
Cd (ug/L)					Ni (ug/L)				
85	3.8		ICPES	85KIM 01	257	25		ICPES	85KIM 01
Cr (ug/L)					Pb (ug/L)				
75	3.2		ICPES	85KIM 01	94	20		ICPES	85KIM 01
Cu (ug/L)					Se (ug/L)				
359	12		ICPES	85KIM 01	475	36		ICPES	85KIM 01

TABLE 2671-1: COMPILED DATA ON NBS SRM 2671 FLUORIDE IN URINE (revised 3/1/86)

SAMPLE	ELEMENT	UNITS	NBS Mean ± SD
Normal	F	mg/L	0.835 ± 0.082
Elevated	F	mg/L	7.14 ± 0.48

TABLE 2672-1: COMPILED DATA ON NBS SRM 2672 MERCURY IN URINE (revised 3/1/86)

SAMPLE	ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean (n)	METHOD
Entire pool	Butyltin	ug/L	---	1.5 (1)	GC
	Methyltin	ug/L	---	1.0 (1)	GC
	Sn	ug/L	---	28.1 (1)	GC
Normal	Hg	ug/L	49.8 ± 4.2	---	---
Elevated	Hg	ug/L	294 ± 24	---	---

TABLE 2762-2: INDIVIDUAL DATA FOR NBS SRM 2672 Entire Pool (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
BuSn (ug/L)				
1.5			GC	830LS 02
MeSn (ug/L)				
1			GC	830LS 02
Sn (ug/L)				
28.1			GC	830LS 02

TABLE 2674-1: COMPILED DATA FOR NBS SRM 2674 LEAD ON FILTER MEDIA (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD
Pb-Blank	ug/f	1.4 ± 0.7
Pb-I	ug/f	100 ± 3
Pb-II	ug/f	303 ± 9
Pb-III	mg/f	1.505 ± 0.028

TABLE 2675-1: COMPILED DATA FOR NBS SRM 2675 BERYLLIUM ON FILTER MEDIA (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean (n)	METHOD
Be-I	ng/f	52 ± 7	---	---
Be-II	ug/f	0.25 ± 0.03	0.35 (1)	AA
Be-III	ug/f	1.0 ± 0.1	---	---

TABLE 2675-2: INDIVIDUAL DATA FOR NBS SRM 2675 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Be-II (ug/filter)				
0.35			AA	85GAU 04

TABLE 2676-1: COMPILED DATA FOR NBS SRM 2676 METALS ON FILTER MEDIA (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD
Cd-I	ng/f	500 ± 40
Cd-II	ug/f	2.48 ± 0.14
Cd-III	ug/f	10.1 ± 0.4
Mn-I	ug/f	1.93 ± 0.29
Mn-II	ug/f	10.3 ± 1.5
Mn-III	ug/f	20.6 ± 1.0
Pb-I	ug/f	6.8 ± 1.1
Pb-II	ug/f	29 ± 2.6
Pb-III	ug/f	102 ± 6
Zn-I	ug/f	1.02 ± 0.06
Zn-II	ug/f	5.1 ± 0.26
Zn-III	ug/f	10.1 ± 1.1

TABLE 2676A-1: COMPILED DATA FOR NBS SRM 2676A METALS ON FILTER MEDIA (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean (n)	METHOD
Cd-Blank	ug/f	---	0.03 (1)	AA
Cd-I	ug/f	1.02 ± 0.03	---	---
Cd-II	ug/f	2.5 ± 0.02	2.47 (1)	AA
Cd-III	ug/f	10.18 ± 0.10	9.8 (1)	AA
Mn-I	ug/f	1.97 ± 0.06	---	---
Mn-II	ug/f	9.89 ± 0.1	---	---
Mn-III	ug/f	19.7 ± 0.3	---	---
Pb-Blank	ug/f	---	0.17 (1)	AA
Pb-I	ug/f	6.96 ± 0.2	---	---
Pb-II	ug/f	15.23 ± 0.15	15.6 (1)	AA
Pb-III	ug/f	29.64 ± 0.2	28.7 (1)	AA
Zn-Blank	ug/f	---	8.1 (1)	AA
Zn-I	ug/f	9.86 ± 0.28	---	---
Zn-II	ug/f	49.52 ± 0.48	47.6 (1)	AA
Zn-III	ug/f	99.22 ± 0.99	95 (1)	AA

TABLE 2676A-2: INDIVIDUAL DATA FOR NBS SRM 2676A (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Cd-blank (ug/filter)				
0.03			AA	85GAU 04
Cd-II (ug/filter)				
2.47			AA	85GAU 04
Cd-III (ug/filter)				
9.8			AA	85GAU 04
Pb-blank (ug/filter)				
0.17			AA	85GAU 04
Pb-II (ug/filter)				
15.6			AA	85GAU 04
Pb-III (ug/filter)				
28.7			AA	85GAU 04
Zn-blank (ug/filter)				
8.1			AA	85GAU 04
Zn-II (ug/filter)				
47.6			AA	85GAU 04
Zn-III (ug/filter)				
95			AA	85GAU 04

TABLE 2676B-1: COMPILED DATA FOR NBS SRM 2676B METALS ON FILTER MEDIA (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD
Cd-Blank	ug/f	< 0.01
Cd-I	ug/f	0.99 ± 0.02
Cd-II	ug/f	2.49 ± 0.04
Cd-III	ug/f	10.14 ± 0.12
Mn-Blank	ug/f	< 0.01
Mn-I	ug/f	1.88 ± 0.03
Mn-II	ug/f	9.41 ± 0.13
Mn-III	ug/f	18.5 ± 0.3
Pb-Blank	ug/f	< 0.04
Pb-I	ug/f	7.55 ± 0.1
Pb-II	ug/f	14.9 ± 0.2
Pb-III	ug/f	30.4 ± 0.4
Zn-Blank	ug/f	0.4 ± 0.1
Zn-I	ug/f	10.01 ± 0.14
Zn-II	ug/f	49.7 ± 0.7
Zn-III	ug/f	99.5 ± 1.2

TABLE 2677-1: COMPILED DATA FOR NBS SRM 2677 BERYLLIUM AND ARSENIC ON FILTER MEDIA (revised 3/1/86)

ELEMENT	UNITS	NBS Mean ± SD
As-Blank	ng/f	< 2
As-I	ng/f	103 ± 5
As-II	ug/f	1.07 ± 0.05
As-III	ug/f	10.5 ± 0.5
Be-Blank	ng/f	< 1
Be-I	ng/f	52 ± 3
Be-II	ng/f	256 ± 13
Be-III	ug/f	1.03 ± 0.05

TABLE 2679-1: COMPILED DATA FOR NBS SRM 2679 QUARTZ ON FILTER MEDIA (revised 3/1/86)

MATERIAL	UNITS	NBS Mean ± SD
Clay-A	ug/f	400
Clay-B	ug/f	370
Clay-C	ug/f	320
Clay-D	ug/f	200
Quartz-A	ug/f	3.8 ± 0.5
Quartz-B	ug/f	29.9 ± 3.6
Quartz-C	ug/f	76.1 ± 9.1
Quartz-D	ug/f	193.2 ± 23.2

TABLE 2682-1: COMPILED DATA FOR NBS SRM 2682 SULFUR IN COAL (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	METHOD MEANS		
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Method
ASH	%	6.37 ± 0.18	---		---	---	---		
Ag	ng/g	---	< 1000		---	---	< 1000		
Al	ug/g	4600	4290 ± 290	(3)	4140	4100 - 4620	4290 ± 290	(3)	NAA
As	ug/g	1	0.89 ± 0.16	(3)	0.96	0.7 - 1	0.89 ± 0.16	(3)	NAA
Au	ng/g	---	< 6		---	---	< 6		
B	ug/g	39	39	(1)	---	---	39	(1)	TCGS
Ba	ug/g	382	361	(2)	---	340 - 382	361	(2)	NAA
Br	ug/g	3.7	3.5 ± 0.3	(3)	3.64	3.1 - 3.74	3.5 ± 0.3	(3)	NAA
C	%	75	76	(1)	---	---	76	(1)	TCGS
Ca	%	1.1	1.03	(1)	---	---	1.03	(1)	NAA
Ce	ug/g	10	9.87	(1)	---	---	9.87	(1)	NAA
Cl	ug/g	---	37	(1)	---	---	37	(1)	NAA
Co	ug/g	1.7	1.50	(2)	---	1.33 - 1.66	1.50	(2)	NAA
Cr	ug/g	15	15.2	(2)	---	15 - 15.4	15.2	(2)	NAA
Cs	ng/g	< 100	---		---	---	---		
Dy	ug/g	---	0.6	(1)	---	---	0.6	(1)	NAA
Eu	ng/g	170	156	(2)	---	140 - 172	156	(2)	NAA
Fe	ug/g	2400	2260	(2)	---	2100 - 2420	2260	(2)	NAA
Ga	ug/g	---	< 6		---	---	< 6		
H	%	4.7	4.7	(1)	---	---	4.7	(1)	TCGS
H2O-	%	18	---		---	---	---		
HEAT	btu/lb	11800 ± 240	---		---	---	---		
Hf	ng/g	600	565	(2)	---	530 - 600	565	(2)	NAA
K	ug/g	100	117	(1)	---	---	117	(1)	NAA
La	ug/g	5.2	4.4 ± 0.8	(3)	4.59	3.56 - 5.17	4.4 ± 0.8	(3)	NAA
Lu	ng/g	---	< 30		---	---	< 30		
Mg	ug/g	2000	---		---	---	---		
Mn	ug/g	26	22.2	(2)	---	21.8 - 22.6	22.2	(2)	NAA
Mo	ug/g	---	< 5		---	---	< 5		
N	%	0.8	0.8	(1)	---	---	0.8	(1)	TCGS
Na	ug/g	1000	895	(2)	---	810 - 981	896	(2)	NAA
Rb	ug/g	< 2	---		---	---	---		
S	ug/g	4700 ± 300	4700 ± 180	(5)	4670	4470 - 4940	4690 ± 110	(3)	CB
S	ug/g	---	---		---	---	4940	(1)	IDMS
S	ug/g	---	---		---	---	4470	(1)	TCGS
S-32/34	ratio	---	22.699	(1)	---	---	22.699	(1)	IDMS
S-33/34	ratio	---	0.1783	(1)	---	---	0.1783	(1)	IDMS
Sb	ng/g	190	189	(1)	---	---	189	(1)	NAA
Sc	ug/g	1.5	1.41	(2)	---	1.3 - 1.524	1.41	(2)	NAA
Se	ug/g	0.91	0.91	(1)	---	---	0.91	(1)	NAA
Sm	ng/g	780	704	(2)	---	633 - 776	704	(2)	NAA
Ta	ng/g	---	< 400		---	---	< 400		
Tb	ng/g	---	< 100		---	---	< 100		
Th	ug/g	1.5	1.43	(2)	---	1.33 - 1.532	1.43	(2)	NAA
Ti	ug/g	500	540	(1)	---	---	540	(1)	NAA
U	ng/g	520	490 ± 35	(3)	500	448 - 519	490 ± 35	(3)	NAA
V	ug/g	15	13.45	(2)	---	13 - 13.9	13.45	(2)	NAA
W	ug/g	1.8	1.46	(2)	---	1.1 - 1.81	1.46	(2)	NAA
Yb	ng/g	---	< 300		---	---	< 300		
Zn	ug/g	8.6	8.6	(1)	---	---	8.6	(1)	NAA
Zr	ug/g	---	< 100		---	---	< 100		

TABLE 2682-2: INDIVIDUAL DATA FOR NBS SRM 2682 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ag (ng/g)				
< 1000			ITNA	86GLA 01
Al (ug/g)				
4100	200		ITNA	86GLA 01
4140	120		ITNA	85GAU 04
4620	20		ITNA	83LIN 02
As (ug/g)				
0.7	0.3		ITNA	86GLA 01
0.96	0.06		ITNA	85GAU 04
1	0.02		ITNA	83LIN 02
Au (ng/g)				
< 6			ITNA	86GLA 01
B (ug/g)				
39	1.3		TCGS	83LIN 02
Ba (ug/g)				
340	20		ITNA	86GLA 01
382	5		ITNA	83LIN 02
Br (ug/g)				
3.1	0.3		ITNA	86GLA 01
3.64	0.19		ITNA	85GAU 04
3.74	0.18		ITNA	83LIN 02
C (%)				
76	3.8		TCGS	83LIN 02
Ca (%)				
1.03	0.1		ITNA	86GLA 01
Ce (ug/g)				
9.87	0.08		ITNA	83LIN 02
Cl (ug/g)				
< 40			ITNA	86GLA 01
37	4		ITNA	85GAU 04

Conc	Uncer	Com	Method	Reference
Co (ug/g)				
1.33	0.15		ITNA	86GLA 01
1.66	0.03		ITNA	83LIN 02
Cr (ug/g)				
15	0.8		ITNA	86GLA 01
15.4	0.3		ITNA	83LIN 02
Dy (ug/g)				
0.6	0.2		ITNA	86GLA 01
Eu (ng/g)				
140	40		ITNA	86GLA 01
172	5		ITNA	83LIN 02
Fe (ug/g)				
2100	200		ITNA	86GLA 01
2420	30		ITNA	83LIN 02
Ga (ug/g)				
< 6			ITNA	86GLA 01
H (%)				
4.7	0.13		TCGS	83LIN 02
Hf (ng/g)				
530	40		ITNA	86GLA 01
600	20		ITNA	83LIN 02
K (ug/g)				
< 700			ITNA	86GLA 01
117	14		ITNA	83LIN 02
La (ug/g)				
3.56	0.13		ITNA	86GLA 01
4.59	0.14		ITNA	85GAU 04
5.17	0.03		ITNA	83LIN 02
Lu (ng/g)				
< 30			ITNA	86GLA 01

TABLE 2682-2: INDIVIDUAL DATA FOR NBS SRM 2682 (cont.)

Conc	Uncer	Com	Method	Reference
Mn (ug/g)				
21.8	0.1		ITNA	86GLA 01
22.6	0.8		ITNA	85GAU 04
Mo (ug/g)				
<	5		ITNA	86GLA 01
N (%)				
0.8	0.3		TCGS	83LIN 02
Na (ug/g)				
810	30		ITNA	86GLA 01
981	12		ITNA	85GAU 04
S (ug/g)				
4470	130		TCGS	83LIN 02
4600	200		CB	84GLA 11
4670	60		CB	86GAU 01
4810	50		CB	85GLA 03
4940	110		IDMS	84KEL 01
S-32/34 (ratio)				
22.699			IDMS	84KEL 01
S-33/34 (ratio)				
0.1783			IDMS	84KEL 01
Sb (ng/g)				
<	150		ITNA	86GLA 01
189	9		ITNA	83LIN 02
Sc (ug/g)				
1.3	0.1		ITNA	86GLA 01
1.524	0.005		ITNA	83LIN 02
Se (ug/g)				
<	1		ITNA	86GLA 01
0.91	0.1		ITNA	83LIN 02
Sm (ng/g)				
633	16		ITNA	85GAU 04
776	4		ITNA	83LIN 02
Ta (ng/g)				
<	400		ITNA	86GLA 01
Tb (ng/g)				
<	100		ITNA	86GLA 01
Th (ug/g)				
1.33	0.06		ITNA	86GLA 01
1.532	0.014		ITNA	83LIN 02
Ti (ug/g)				
540	200		ITNA	86GLA 01
U (ng/g)				
448	23		DNA	86GLA 01
500			DNA	86GAU 01
519	15		ITNA	83LIN 02
V (ug/g)				
13	1		ITNA	86GLA 01
13.9	0.7		ITNA	85GAU 04
W (ug/g)				
1.1	0.3		ITNA	86GLA 01
1.81	0.03		ITNA	83LIN 02
Yb (ng/g)				
<	300		ITNA	86GLA 01
Zn (ug/g)				
<	10		ITNA	86GLA 01
8.6	0.9		ITNA	83LIN 02
Zr (ug/g)				
<	100		ITNA	86GLA 01

TABLE 2683-1: COMPILED DATA FOR NBS SRM 2683 SULFUR IN COAL (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	METHOD MEANS		
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Method
ASH	%	6.85 ± 0.02	---		---	---	---		
Ag	ng/g	---	< 900		---	---	< 900		NAA
Al	ug/g	8600	8590	(2)	---	8580 - 8600	8590	(2)	NAA
As	ug/g	3.6	3.82	(2)	---	3.64 - 4	3.82	(2)	NAA
Au	ng/g	---	< 5		---	---	< 5		NAA
B	ug/g	67	67	(1)	---	---	67	(1)	TCGS
Ba	ug/g	71	71	(1)	---	---	71	(1)	NAA
Br	ug/g	17	17.3	(2)	---	16.85 - 17.8	17.3	(2)	NAA
C	%	79	79	(1)	---	---	79	(1)	TCGS
Ca	ug/g	2000	< 2000		---	---	< 2000		NAA
Ce	ug/g	9	9.18	(1)	---	---	9.18	(1)	NAA
Cl	ug/g	---	1100	(1)	---	---	1100	(1)	NAA
Co	ug/g	2.2	2.24	(2)	---	2.22 - 2.26	2.24	(2)	NAA
Cr	ug/g	11	11.3	(2)	---	11.02 - 11.5	11.26	(2)	NAA
Cs	ug/g	0.4	0.44	(1)	---	---	0.44	(1)	NAA
Dy	ng/g	---	< 700		---	---	< 700		NAA
Eu	ng/g	180	178	(2)	---	177 - 180	178.5	(2)	NAA
Fe	ug/g	7600	7760	(2)	---	7620 - 7900	7760	(2)	NAA
Ga	ug/g	---	< 5		---	---	< 5		NAA
H	%	5	5.0	(1)	---	---	5.0	(1)	TCGS
H2O-	%	1.4	---		---	---	---		
HEAT	btu/lb	14060 ± 60	---		---	---	---		
Hf	ng/g	420	409	(2)	---	400 - 418	409	(2)	NAA
K	ug/g	800	750	(1)	---	---	750	(1)	NAA
La	ug/g	5.1	4.6	(2)	---	4.2 - 5.05	4.62	(2)	NAA
Lu	ng/g	---	60	(1)	---	---	60	(1)	NAA
Mg	ug/g	500	---		---	---	---		
Mn	ug/g	13	11.8	(1)	---	---	11.8	(1)	NAA
Mo	ug/g	---	< 3		---	---	< 3		NAA
N	%	1.6	1.6	(1)	---	---	1.6	(1)	TCGS
Na	ug/g	500	500	(1)	---	---	500	(1)	NAA
Rb	ug/g	5.3	---		---	---	---		
S	%	1.85 ± 0.06	1.89 ± 0.05	(5)	1.90	1.82 - 1.95	1.91 ± 0.04	(3)	CB
S	%	---	---		---	---	1.90	(1)	IDMS
S	%	---	---		---	---	1.82	(1)	TCGS
S-32/34	ratio	---	22.364	(1)	---	---	22.364	(1)	IDMS
S-33/34	ratio	---	0.1769	(1)	---	---	0.1769	(1)	IDMS
Sb	ng/g	280	250	(2)	---	220 - 279	250	(2)	NAA
Sc	ug/g	1.9	1.96	(2)	---	1.94 - 1.99	1.97	(2)	NAA
Se	ug/g	1.2	1.22	(2)	---	1.2 - 1.23	1.22	(2)	NAA
Sm	ug/g	0.86	0.86	(1)	---	---	0.86	(1)	NAA
Ta	ng/g	---	< 300		---	---	< 300		NAA
Tb	ng/g	---	< 300		---	---	< 300		NAA
Th	ug/g	1.4	1.41	(2)	---	1.36 - 1.45	1.41	(2)	NAA
Ti	ug/g	400	440	(1)	---	---	440	(1)	NAA
U	ng/g	420	443 ± 22	(3)	450	418 - 460	443 ± 22	(3)	NAA
V	ug/g	14	15.7	(1)	---	---	15.7	(1)	NAA
W	ng/g	480	480	(1)	---	---	480	(1)	NAA
Yb	ng/g	---	370	(1)	---	---	370	(1)	NAA
Zn	ug/g	9.5	9.5	(1)	---	---	9.5	(1)	NAA
Zr	ug/g	---	< 90		---	---	< 90		NAA

TABLE 2683-2: INDIVIDUAL DATA FOR NBS SRM 2683 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ag (ng/g)				
<	900		ITNA	86GLA 01
Al (ug/g)				
8580	50		ITNA	83LIN 02
8600	200		ITNA	86GLA 01
As (ug/g)				
3.64	0.13		ITNA	83LIN 02
4	0.1		ITNA	86GLA 01
Au (ng/g)				
<	5		ITNA	86GLA 01
B (ug/g)				
67	2		TCGS	83LIN 02
Ba (ug/g)				
<	60		ITNA	86GLA 01
71	3		ITNA	83LIN 02
Br (ug/g)				
16.85	0.04		ITNA	83LIN 02
17.8	0.6		ITNA	86GLA 01
C (%)				
79	4		TCGS	83LIN 02
Ca (ug/g)				
<	2000		ITNA	86GLA 01
Ce (ug/g)				
9.18	0.08		ITNA	83LIN 02
Cl (ug/g)				
1100	100		ITNA	86GLA 01
Co (ug/g)				
2.22	0.09		ITNA	83LIN 02
2.26	0.04		ITNA	86GLA 01
Cr (ug/g)				
11.02	0.18		ITNA	83LIN 02
11.5	0.4		ITNA	86GLA 01
Cs (ug/g)				
0.44	0.02		ITNA	83LIN 02
Dy (ng/g)				
<	700		ITNA	86GLA 01
Eu (ng/g)				
177	6		ITNA	83LIN 02
180	12		ITNA	86GLA 01
Fe (ug/g)				
7620	190		ITNA	83LIN 02
7900	200		ITNA	86GLA 01
Ga (ug/g)				
<	5		ITNA	86GLA 01
H (%)				
5	0.1		TCGS	83LIN 02
Hf (ng/g)				
400	70		ITNA	86GLA 01
418	4		ITNA	83LIN 02
K (ug/g)				
<	450		ITNA	86GLA 01
750	10		ITNA	83LIN 02
La (ug/g)				
4.2	0.2		ITNA	86GLA 01
5.05	0.04		ITNA	83LIN 02
Lu (ng/g)				
60	7		ITNA	86GLA 01
Mn (ug/g)				
11.8	0.2		ITNA	86GLA 01

TABLE 2683-2: INDIVIDUAL DATA FOR NBS SRM 2683 (cont.)

Conc	Uncer	Com	Method	Reference
Mo (ug/g)				
<	3		ITNA	86GLA 01
N (%)				
1.6	0.9		TCGS	83LIN 02
Na (ug/g)				
500	30		ITNA	86GLA 01
S (%)				
1.82	0.05		TCGS	83LIN 02
1.87	0.03		CB	84GLA 11
1.896	0.037		IDMS	84KEL 01
1.91	0.03		CB	86GAU 01
1.95	0.04		CB	85GLA 03
S-32/34 (ratio)				
22.364			IDMS	84KEL 01
S-33/34 (ratio)				
0.1769			IDMS	84KEL 01
Sb (ng/g)				
220	20		ITNA	86GLA 01
279	8		ITNA	83LIN 02
Sc (ug/g)				
1.941	0.008		ITNA	83LIN 02
1.99	0.06		ITNA	86GLA 01
Se (ug/g)				
1.2	0.2		ITNA	86GLA 01
1.23	0.09		ITNA	83LIN 02

Conc	Uncer	Com	Method	Reference
Sm (ug/g)				
0.859	0.005		ITNA	83LIN 02
Ta (ng/g)				
<	300		ITNA	86GLA 01
Tb (ng/g)				
<	300		ITNA	86GLA 01
Th (ug/g)				
1.363	0.011		ITNA	83LIN 02
1.45	0.06		ITNA	86GLA 01
Ti (ug/g)				
440	90		ITNA	86GLA 01
U (ng/g)				
418	11		ITNA	83LIN 02
450			DNA	86GAU 01
460	40		DNA	86GLA 01
V (ug/g)				
15.7	0.9		ITNA	86GLA 01
W (ng/g)				
<	600		ITNA	86GLA 01
480	30		ITNA	83LIN 02
Yb (ng/g)				
370	60		ITNA	86GLA 01
Zn (ug/g)				
<	10		ITNA	86GLA 01
9.5	0.6		ITNA	83LIN 02
Zr (ug/g)				
<	90		ITNA	86GLA 01

TABLE 2684-1: COMPILED DATA FOR NBS SRM 2684 SULFUR IN COAL (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	METHOD MEANS		
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Method
ASH	%	11.09 ± 0.18	---		---	---	---		
Ag	ng/g	---	< 1200		---	---	< 1200		
Al	%	1.1	1.10	(2)	---	1.10 - 1.103	1.10	(2)	NAA
As	ug/g	3.9	3.92	(2)	---	3.87 - 3.96	3.92	(2)	NAA
Au	ng/g	---	< 5		---	---	< 5		NAA
B	ug/g	114	114	(1)	---	---	114	(1)	TCGS
Ba	ug/g	41	41.4	(1)	---	---	41.4	(1)	NAA
Br	ug/g	11	10.4	(2)	---	10.2 - 10.6	10.4	(2)	NAA
C	%	68	68	(1)	---	---	68	(1)	TCGS
Ca	ug/g	4400	4800	(1)	---	---	4800	(1)	NAA
Ce	ug/g	12	11.5	(1)	---	---	11.5	(1)	NAA
Cl	ug/g	---	1050	(1)	---	---	1050	(1)	NAA
Co	ug/g	3.9	3.72	(2)	---	3.6 - 3.85	3.72	(2)	NAA
Cr	ug/g	17	16.6	(2)	---	16.4 - 16.8	16.6	(2)	NAA
Cs	ug/g	1.2	1.15	(1)	---	---	1.15	(1)	NAA
Dy	ug/g	---	0.96	(1)	---	---	0.96	(1)	NAA
Eu	ng/g	230	226	(2)	---	226 - 226	226	(2)	NAA
Fe	%	1.5	0.96	(2)	---	0.45 - 1.46	0.96	(2)	NAA
Ga	ug/g	---	< 5		---	---	< 5		NAA
H	%	4.8	4.8	(1)	---	---	4.8	(1)	TCGS
H2O-	%	3.6	---		---	---	---		
HEAT	btu/lb	12760 ± 200	---		---	---	---		
Hf	ng/g	570	568	(2)	---	565 - 570	568	(2)	NAA
K	ug/g	2000	1850	(2)	---	1730 - 1969	1850	(2)	NAA
La	ug/g	6.7	5.98	(2)	---	5.3 - 6.65	5.98	(2)	NAA
Lu	ng/g	---	74	(1)	---	---	74	(1)	NAA
Mg	ug/g	800	---		---	---	---		
Mn	ug/g	36	32	(1)	---	---	32	(1)	NAA
Mo	ug/g	---	< 4		---	---	< 4		NAA
N	%	1.6	1.6	(1)	---	---	1.6	(1)	TCGS
Na	ug/g	300	240	(1)	---	---	240	(1)	NAA
Rb	ug/g	15	14.6	(1)	---	---	14.6	(1)	NAA
S	%	3.00 ± 0.13	2.99 ± 0.06	(4)	2.95	2.94 - 3.08	2.94	(1)	TCGS
S	%	---	---		---	---	2.96	(2)	CB
S	%	---	---		---	---	3.08	(1)	IDMS
S-32/34	ratio	---	22.726	(1)	---	---	22.726	(1)	IDMS
S-33/34	ratio	---	0.1782	(1)	---	---	0.1782	(1)	IDMS
Sb	ng/g	350	372	(2)	---	354 - 390	372	(2)	NAA
Sc	ug/g	2.7	2.64	(2)	---	2.62 - 2.66	2.64	(2)	NAA
Se	ug/g	1.9	1.82	(2)	---	1.77 - 1.87	1.82	(2)	NAA
Sm	ug/g	1.1	1.11	(1)	---	---	1.11	(1)	NAA
Ta	ng/g	---	< 300		---	---	< 300		NAA
Tb	ng/g	---	< 200		---	---	< 200		NAA
Th	ug/g	2	1.98	(2)	---	1.96 - 2.00	1.98	(2)	NAA
Ti	ug/g	600	580	(1)	---	---	580	(1)	NAA
U	ug/g	0.9	0.88 ± 0.02	(3)	0.88	0.87 - 0.90	0.88 ± 0.02	(3)	NAA
V	ug/g	22	22	(1)	---	---	22	(1)	NAA
W	ng/g	560	562	(1)	---	---	562	(1)	NAA
Yb	ng/g	---	510	(1)	---	---	510	(1)	NAA
Zn	ug/g	110	110	(2)	---	110 - 110	110	(2)	NAA
Zr	ug/g	---	< 120		---	---	< 120		NAA

TABLE 2684-2: INDIVIDUAL DATA FOR NBS SRM 2684 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ag (ng/g)				
< 1200			ITNA	86GLA 01
Al (%)				
1.1	0.04		ITNA	86GLA 01
1.103	0.006		ITNA	83LIN 02
As (ug/g)				
3.87	0.14		ITNA	83LIN 02
3.96	0.14		ITNA	86GLA 01
Au (ng/g)				
< 5			ITNA	86GLA 01
B (ug/g)				
114	3		TCGS	83LIN 02
Ba (ug/g)				
< 80			ITNA	86GLA 01
41.4	2.6		ITNA	83LIN 02
Br (ug/g)				
10.2	0.2		ITNA	86GLA 01
10.6	0.5		ITNA	83LIN 02
C (%)				
68	2		TCGS	83LIN 02
Ca (ug/g)				
4800	400		ITNA	86GLA 01
Ce (ug/g)				
11.5	0.2		ITNA	83LIN 02
Cl (ug/g)				
1050	100		ITNA	86GLA 01
Co (ug/g)				
3.6	0.2		ITNA	86GLA 01
3.85	0.05		ITNA	83LIN 02
Cr (ug/g)				
16.4	0.9		ITNA	86GLA 01
16.8	0.3		ITNA	83LIN 02
Cs (ug/g)				
1.15	0.05		ITNA	83LIN 02
Dy (ug/g)				
0.96	0.06		ITNA	86GLA 01
Eu (ng/g)				
226	9		ITNA	83LIN 02
226	20		ITNA	86GLA 01
Fe (%)				
0.454	0.026		ITNA	83LIN 02
1.46	0.04		ITNA	86GLA 01
Ga (ug/g)				
< 5			ITNA	86GLA 01
H (%)				
4.8	0.1		TCGS	83LIN 02
Hf (ng/g)				
565	12		ITNA	83LIN 02
570	7		ITNA	86GLA 01
K (ug/g)				
1730	140		ITNA	86GLA 01
1969	16		ITNA	83LIN 02
La (ug/g)				
5.3	0.13		ITNA	86GLA 01
6.65	0.1		ITNA	83LIN 02
Lu (ng/g)				
74	5		ITNA	86GLA 01
Mn (ug/g)				
32	0.2		ITNA	86GLA 01

TABLE 2684-2: INDIVIDUAL DATA FOR NBS SRM 2684 (cont.)

Conc	Uncer	Com	Method	Reference
Mo (ug/g)				
<	4		ITNA	86GLA 01
N (%)				
1.6	0.4		TCGS	83LIN 02
Na (ug/g)				
240	20		ITNA	86GLA 01
Rb (ug/g)				
14.6	1.1		ITNA	83LIN 02
S (%)				
2.94	0.07		TCGS	83LIN 02
2.95	0.03		CB	86GAU 01
2.98	0.08		CB	85GLA 03
3.076	0.09		IDMS	84KEL 01
S-32/34 (ratio)				
22.726			IDMS	84KEL 01
S-33/34 (ratio)				
0.1782			IDMS	84KEL 01
Sb (ng/g)				
354	8		ITNA	83LIN 02
390	50		ITNA	86GLA 01
Sc (ug/g)				
2.62	0.1		ITNA	86GLA 01
2.665	0.02		ITNA	83LIN 02
Se (ug/g)				
1.77	0.13		ITNA	86GLA 01
1.87	0.16		ITNA	83LIN 02
Sm (ug/g)				
1.109	0.012		ITNA	83LIN 02
Ta (ng/g)				
<	300		ITNA	86GLA 01
Tb (ng/g)				
<	200		ITNA	86GLA 01
Th (ug/g)				
1.955	0.016		ITNA	83LIN 02
2	0.08		ITNA	86GLA 01
Ti (ug/g)				
580	60		ITNA	86GLA 01
U (ug/g)				
0.87	0.02		DNA	86GLA 01
0.88			DNA	86GAU 01
0.901	0.01		ITNA	83LIN 02
V (ug/g)				
22	4		ITNA	86GLA 01
W (ng/g)				
<	700		ITNA	86GLA 01
562	22		ITNA	83LIN 02
Yb (ng/g)				
510	50		ITNA	86GLA 01
Zn (ug/g)				
110	11		ITNA	86GLA 01
110	12		ITNA	83LIN 02
Zr (ug/g)				
<	120		ITNA	86GLA 01

TABLE 2685-1: COMPILED DATA FOR NBS SRM 2685 SULFUR IN COAL (revised 3/1/86)

ELEMENT	UNITS	NBS	CONSENSUS		MEDIAN	RANGE	METHOD MEANS		
		Mean ± SD	Mean ± SD	(n)			Mean ± SD	(n)	Method
ASH	%	16.53 ± 0.15	---		---	---	---		
Ag	ng/g	---	< 1500		---	---	< 1500		NAA
Al	%	1.7	1.66	(2)	---	1.64 - 1.67	1.65	(2)	NAA
As	ug/g	12	12.6	(2)	---	12.3 - 12.9	12.6	(2)	NAA
Au	ng/g	---	< 6		---	---	< 6		NAA
B	ug/g	109	109	(1)	---	---	109	(1)	TCGS
Ba	ug/g	105	105	(1)	---	---	105	(1)	NAA
Br	ug/g	5.6	5.84	(2)	---	5.57 - 6.1	5.84	(2)	NAA
C	%	66	66	(1)	---	---	66	(1)	TCGS
Ca	ug/g	5200	5600	(1)	---	---	5600	(1)	NAA
Ce	ug/g	18	17.9	(1)	---	---	17.9	(1)	NAA
Cl	ug/g	---	520	(1)	---	---	520	(1)	NAA
Co	ug/g	4.6	4.58	(2)	---	4.57 - 4.6	4.58	(2)	NAA
Cr	ug/g	22	22.4	(2)	---	22.3 - 22.6	22.4	(2)	NAA
Cs	ug/g	1.3	1.31	(1)	---	---	1.31	(1)	NAA
Dy	ug/g	---	1.35	(1)	---	---	1.35	(1)	NAA
Eu	ng/g	360	344	(2)	---	330 - 357	344	(2)	NAA
Fe	%	2.9	2.45	(2)	---	2.40 - 2.51	2.45	(2)	NAA
Ga	ug/g	---	< 7		---	---	< 7		NAA
H	%	4.6	4.6	(1)	---	---	4.6	(1)	TCGS
H2O-	%	1.8	---		---	---	---		
HEAT	btu/lb	12100 ± 180	---		---	---	---		
Hf	ug/g	0.91	0.93	(2)	---	0.913 - 0.94	0.93	(2)	NAA
K	ug/g	2600	2421	(2)	---	2250 - 2592	2421	(2)	NAA
La	ug/g	10	9.4	(2)	---	8.6 - 10.2	9.4	(2)	NAA
Lu	ng/g	---	116	(1)	---	---	116	(1)	NAA
Mg	ug/g	1000	---		---	---	---		
Mn	ug/g	41	38	(1)	---	---	38	(1)	NAA
Mo	ug/g	---	< 5		---	---	< 5		NAA
N	%	1.1	1.1	(1)	---	---	1.1	(1)	TCGS
Na	ug/g	800	755	(1)	---	---	755	(1)	NAA
Rb	ug/g	17	16.8	(1)	---	---	16.8	(1)	NAA
S	%	4.62 ± 0.18	4.68 ± 0.06	(4)	4.64	4.62 - 4.76	4.66	(2)	CB
S	%	---	---		---	---	4.64	(1)	TCGS
S	%	---	---		---	---	4.76	(1)	IDMS
S-32/34	ratio	---	22.546	(1)	---	---	22.546	(1)	IDMS
S-33/34	ratio	---	0.1777	(1)	---	---	0.1777	(1)	IDMS
Sb	ng/g	360	363	(2)	---	357 - 370	363	(2)	NAA
Sc	ug/g	3.7	3.72	(2)	---	3.7 - 3.73	3.72	(2)	NAA
Se	ug/g	1.9	1.91	(1)	---	---	1.91	(1)	NAA
Sm	ug/g	1.7	1.73	(1)	---	---	1.73	(1)	NAA
Ta	ng/g	---	240	(1)	---	---	240	(1)	NAA
Tb	ng/g	---	< 200		---	---	< 200		NAA
Th	ug/g	2.7	2.66	(2)	---	2.65 - 2.66	2.66	(2)	NAA
Ti	ug/g	900	910	(1)	---	---	910	(1)	NAA
U	ug/g	0.95	0.957 ± 0.012	(3)	0.952	0.948 - 0.97	0.957 ± 0.012	(3)	NAA
V	ug/g	31	31	(1)	---	---	31	(1)	NAA
W	ug/g	1.2	1.18	(1)	---	---	1.18	(1)	NAA
Yb	ng/g	---	660	(1)	---	---	660	(1)	NAA
Zn	ug/g	17	17.1	(1)	---	---	17.1	(1)	NAA
Zr	ug/g	---	< 150		---	---	< 150		NAA

TABLE 2685-2: INDIVIDUAL DATA FOR NBS SRM 2685 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ag (ng/g)				
<	1500		ITNA	86GLA 01
Al (%)				
1.64	0.04		ITNA	86GLA 01
1.669	0.007		ITNA	83LIN 02
As (ug/g)				
12.28	0.38		ITNA	83LIN 02
12.9	0.6		ITNA	86GLA 01
Au (ng/g)				
<	6		ITNA	86GLA 01
B (ug/g)				
109	5		TCGS	83LIN 02
Ba (ug/g)				
<	80		ITNA	86GLA 01
105	6		ITNA	83LIN 02
Br (ug/g)				
5.57	0.07		ITNA	83LIN 02
6.1	0.5		ITNA	86GLA 01
C (%)				
66	3		TCGS	83LIN 02
Ca (ug/g)				
5600	600		ITNA	86GLA 01
Ce (ug/g)				
17.88	0.18		ITNA	83LIN 02
Cl (ug/g)				
520	40		ITNA	86GLA 01
Co (ug/g)				
4.57	0.06		ITNA	83LIN 02
4.6	0.2		ITNA	86GLA 01

Conc	Uncer	Com	Method	Reference
Cr (ug/g)				
22.3	0.4		ITNA	83LIN 02
22.6	0.8		ITNA	86GLA 01
Cs (ug/g)				
1.31	0.07		ITNA	83LIN 02
Dy (ug/g)				
1.35	0.11		ITNA	86GLA 01
Eu (ng/g)				
330	40		ITNA	86GLA 01
357	4		ITNA	83LIN 02
Fe (%)				
2.396	0.065		ITNA	83LIN 02
2.51	0.16		ITNA	86GLA 01
Ga (ug/g)				
<	7		ITNA	86GLA 01
H (%)				
4.6	0.2		TCGS	83LIN 02
Hf (ug/g)				
0.913	0.011		ITNA	83LIN 02
0.94	0.005		ITNA	86GLA 01
K (ug/g)				
2250	200		ITNA	86GLA 01
2592	45		ITNA	83LIN 02
La (ug/g)				
8.6	0.4		ITNA	86GLA 01
10.19	0.11		ITNA	83LIN 02
Lu (ng/g)				
116	30		ITNA	86GLA 01
Mn (ug/g)				
38	1		ITNA	86GLA 01

TABLE 2685-2: INDIVIDUAL DATA FOR NBS SRM 2685 (cont.)

Conc	Uncer	Com	Method	Reference
Mo (ug/g)				
<	5		ITNA	86GLA 01
N (%)				
1.1	0.3		TCGS	83LIN 02
Na (ug/g)				
755	50		ITNA	86GLA 01
Rb (ug/g)				
16.8	1.3		ITNA	83LIN 02
S (%)				
4.62	0.07		CB	85GLA 03
4.64	0.19		TCGS	83LIN 02
4.7	0.02		CB	86GAU 01
4.76	0.19		IDMS	84KEL 01
S-32/34 (ratio)				
22.546			IDMS	84KEL 01
S-33/34 (ratio)				
0.1777			IDMS	84KEL 01
Sb (ng/g)				
357	12		ITNA	83LIN 02
370	30		ITNA	86GLA 01
Sc (ug/g)				
3.7	0.019		ITNA	83LIN 02
3.73	0.13		ITNA	86GLA 01
Se (ug/g)				
<	3		ITNA	86GLA 01
1.91	0.16		ITNA	83LIN 02
Sm (ug/g)				
1.729	0.007		ITNA	83LIN 02
Ta (ng/g)				
240	70		ITNA	86GLA 01
Tb (ng/g)				
<	200		ITNA	86GLA 01
Th (ug/g)				
2.65	0.1		ITNA	86GLA 01
2.66	0.03		ITNA	83LIN 02
Ti (ug/g)				
910	80		ITNA	86GLA 01
U (ug/g)				
0.948	0.013		ITNA	83LIN 02
0.952	0.005		DNA	86GLA 01
0.97			DNA	86GAU 01
V (ug/g)				
31	1		ITNA	86GLA 01
W (ug/g)				
<	1.5		ITNA	86GLA 01
1.18	0.06		ITNA	83LIN 02
Yb (ng/g)				
660	120		ITNA	86GLA 01
Zn (ug/g)				
<	10		ITNA	86GLA 01
17.1	1.1		ITNA	83LIN 02
Zr (ug/g)				
<	150		ITNA	86GLA 01

TABLE 2689-1: COMPILED DATA FOR NBS SRMs 2689-2691 FLY ASH (revised 3/1/87)

ELEMENT	UNITS	NBS		
		2689	2690	2691
		Mean	Mean	Mean
Al	%	12.94	12.35	9.81
Ba	ug/g	800	6500	6600
Ca	%	2.18	5.71	18.45
Fe	%	9.32	3.57	4.42
H2O-	%	0.14	0.12	0.08
K	%	2.14	1.00	0.33
LOI	%	1.76	0.53	0.23
Mg	%	0.61	1.53	3.12
Mn	ug/g	300	300	200
Na	%	0.25	0.24	1.09
P	ug/g	1000	5200	5100
S	ug/g	---	1500	8300
Si	%	24.06	25.85	16.83
Sr	ug/g	700	2000	2700
Ti	ug/g	7500	5200	9000

TABLE 2694-1: COMPILED DATA FOR NBS SRM 2694 SIMULATED RAINWATER (revised 3/1/87)

PARAMETER	UNITS	NBS	
		I	II
		Mean ± SD	Mean ± SD
Acidity	meq/L	0.050 ± 0.002	0.284 ± 0.005
Ca	ug/L	14 ± 3	49 ± 11
Cl	mg/L	0.24	1.0
Conductivity	uS/cm	26 ± 2	130 ± 2
F	ug/L	54 ± 2	98 ± 7
K	ug/L	52 ± 7	106 ± 8
Mg	ug/L	24 ± 2	51 ± 3
Na	ug/L	205 ± 9	419 ± 15
NH4-N	mg/L	---	1.0
NO3-N	mg/L	---	7.06 ± 0.15
pH	units	4.27 ± 0.03	3.59 ± 0.02
SO4	mg/L	2.75 ± 0.05	10.9 ± 0.2

TABLE 4350-1: COMPILED DATA FOR NBS SRM 4350 ENVIRONMENTAL RADIOACTIVITY STANDARD, RIVER SEDIMENT (revised 3/1/86)
(Activities shown as of 1 January 1975)

NUCLIDE	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	METHOD
Ac-228	pCi/g	0.92 ± 0.18	---	---	---	---
Ac-228	mBq/g	34 ± 6.5	---	---	---	---
Am-241	pCi/g	0.0084	< 0.007	---	---	GAMMA
Am-241	mBq/g	0.314	---	---	---	---
Bi-212	mBq/g	50	---	---	---	---
Bi-212	pCi/g	1.4	---	---	---	---
Bi-214	mBq/g	34	---	---	---	---
Bi-214	pCi/g	0.92	---	---	---	---
Cm-244	mBq/g	0.0015	---	---	---	---
Co-60	pCi/g	4.00 ± 0.22	---	---	---	---
Co-60	mBq/g	148 ± 8	---	---	---	---
Cs-137	pCi/g	2.7 ± 0.12	2.83 ± 0.30 (4)	2.7	2.5 - 3.18	GAMMA
Cs-137	mBq/g	100 ± 4.5	---	---	---	---
Eu-152	pCi/g	6.5 ± 0.38	7.11 (1)	---	---	GAMMA
Eu-152	mBq/g	240 ± 14	---	---	---	---
Eu-154	pCi/g	1.4 ± 0.1	1.17 (1)	---	---	GAMMA
Eu-154	mBq/g	52 ± 4	---	---	---	---
Eu-155	pCi/g	0.38	---	---	---	---
Eu-155	mBq/g	14	---	---	---	---
Fe-55	pCi/g	43	---	---	---	---
Fe-55	mBq/g	1600	---	---	---	---
I	ng/g	---	5400 (1)	---	---	NAA
I-129	FCI/G	---	0.032 (1)	---	---	NAA
K-40	pCi/g	14.6 ± 1.3	15.2 (1)	---	---	GAMMA
K-40	mBq/g	540 ± 50	---	---	---	---
Mn-54	pCi/g	0.057 ± 0.007	---	---	---	---
Mn-54	mBq/g	2.1 ± 0.2	---	---	---	---
Pa-231	pCi/g	0.047	---	---	---	---
Pa-231	mBq/g	1.75	---	---	---	---
Pb-212	pCi/g	1.6	---	---	---	---
Pb-212	mBq/g	60	---	---	---	---
Pb-214	pCi/g	1.1	---	---	---	---
Pb-214	mBq/g	41	---	---	---	---
Pu-238	pCi/g	0.002	---	---	---	---
Pu-238	mBq/g	0.067	---	---	---	---
Pu-239	pCi/g	0.038 ± 0.003	0.033 (1)	---	---	AS
Pu-239	mBq/g	1.4 ± 0.12	---	---	---	---
Ra-226	pCi/g	0.84	---	---	---	---
Ra-226	mBq/g	31	---	---	---	---
Sb-125	pCi/g	0.095	---	---	---	---
Sb-125	mBq/g	3.5	---	---	---	---
Sr-90	pCi/g	0.278 ± 0.042	---	---	---	---
Sr-90	mBq/g	10.3 ± 1.6	---	---	---	---
Th-228	pCi/g	1.07	---	---	---	---
Th-228	mBq/g	39.5	---	---	---	---
Th-230	pCi/g	0.988	---	---	---	---
Th-230	mBq/g	36.6	---	---	---	---

TABLE 4350-1: COMPILED DATA FOR NBS SRM 4350 ENVIRONMENTAL RADIOACTIVITY STANDARD, RIVER SEDIMENT (cont.)

NUCLIDE	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	METHOD
Th-232	pCi/g	0.84	---	---	---	---
Th-232	mBq/g	34.4	---	---	---	---
Tl-208	pCi/g	0.38	---	---	---	---
Tl-208	mBq/g	14	---	---	---	---
U	ug/g	---	0.9 (1)	---	---	NAA
U-234	pCi/g	1.34	---	---	---	---
U-234	mBq/g	49.6	---	---	---	---
U-235	pCi/g	0.05	---	---	---	---
U-235	mBq/g	1.85	---	---	---	---
U-238	pCi/g	1.14	---	---	---	---
U-238	mBq/g	42.2	---	---	---	---
Zn-65	pCi/g	0.35 ± 0.047	---	---	---	---
Zn-65	mBq/g	13 ± 1.8	---	---	---	---

TABLE 4350-2: INDIVIDUAL DATA FOR NBS SRM 4350 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Am-241 (pCi/g)				
<	0.007		GAMMA	86GAU 01
Cs-137 (pCi/g)				
2.5	0.35		GAMMA	84GLA 02
2.7	0.2		GAMMA	86GAU 01
2.95	0.18		GAMMA	85GAU 04
3.18			GAMMA	84GLA 11
Eu-152 (pCi/g)				
7.11			GAMMA	84GLA 11
Eu-154 (pCi/g)				
1.17			GAMMA	84GLA 11
I (ng/g)				
5400	5000		RTNA	79BRA 01
I-129 (fCi/g)				
0.032	0.037		RTNA	79BRA 01
K-40 (pCi/g)				
15.2			GAMMA	86GAU 01
Pu-239 (pCi/g)				
0.033	0.001		AS	81CAR 01
U (ug/g)				
0.9			DNA	84GLA 11

TABLE 4350B-1: COMPILED DATA FOR NBS SRM 4350B ENVIRONMENTAL RADIOACTIVITY, RIVER SEDIMENT (revised 3/1/86)
(Activity as of 9 September 1981)

NUCLIDE	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD	(n)	MEDIAN	RANGE	METHOD
Ac-228	pCi/g	---	1.2	(1)	---	---	GAMMA
Am-241	pCi/g	0.0040 ± 0.0008	0.005	(1)	---	---	AS
Am-241	mBq/g	0.15 ± 0.03	---		---	---	---
Co-60	pCi/g	0.125 ± 0.006	0.12	(2)	---	0.11 - 0.13	GAMMA
Co-60	mBq/g	4.64 ± 0.23	---		---	---	---
Cs-137	pCi/g	0.783 ± 0.049	0.842 ± 0.070	(5)	0.81	0.79 - 0.96	GAMMA
Cs-137	mBq/g	29.0 ± 1.8	---		---	---	---
Eu-152	pCi/g	0.824 ± 0.033	1.16	(1)	---	---	GAMMA
Eu-152	mBq/g	30.5 ± 1.2	---		---	---	---
Eu-154	pCi/g	0.102 ± 0.015	< 0.3		---	---	GAMMA
Eu-154	mBq/g	3.78 ± 0.57	---		---	---	---
Fe-55	pCi/g	0.46	---		---	---	---
Fe-55	mBq/g	17	---		---	---	---
K-40	pCi/g	15	15.13	(1)	---	---	GAMMA
K-40	mBq/g	560	---		---	---	---
Pu-238	FCI/G	0.35 ± 0.06	0.2	(1)	---	---	AS
Pu-238	mBq/g	0.013 ± 0.002	---		---	---	---
Pu-239	pCi/g	0.0137 ± 0.0008	0.0133	(2)	---	0.0116 - 0.0150	AS
Pu-239	mBq/g	0.508 ± 0.029	---		---	---	---
Ra-226	pCi/g	0.967 ± 0.097	1.99	(1)	---	---	GAMMA
Ra-226	mBq/g	35.8 ± 3.6	---		---	---	---
Sr-90	pCi/g	0.14	---		---	---	---
Sr-90	mBq/g	5.3	---		---	---	---
Th-228	pCi/g	0.904	1.03	(1)	---	---	AS
Th-228	mBq/g	33.5	---		---	---	---
Th-230	pCi/g	0.796	0.735	(2)	---	0.67 - 0.8	AS
Th-230	mBq/g	29.5	---		---	---	---
Th-232	pCi/g	0.896	1.07	(1)	---	---	AS
Th-232	mBq/g	33.2	---		---	---	---
U	ug/g	---	2.43	(1)	---	---	NAA
U-234	pCi/g	0.896	---		---	---	---
U-234	mBq/g	33.2	---		---	---	---
U-235	pCi/g	0.046	---		---	---	---
U-235	mBq/g	1.7	---		---	---	---
U-238	pCi/g	0.832	---		---	---	---
U-238	mBq/g	30.8	---		---	---	---

TABLE 4350B-2: INDIVIDUAL DATA FOR NBS SRM 4350B (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ac-228 (pCi/g)				
1.2	0.43		GAMMA	83KIM 01
Am-241 (pCi/g)				
< 0.005	0.006		GAMMA AS	86GAU 01 84GLA 02
Co-60 (pCi/g)				
0.11	0.03		GAMMA	84KRI 01
0.13	0.01		GAMMA	82JEN 03
Cs-137 (pCi/g)				
0.79	0.08		GAMMA	86GAU 01
0.8	0.1		GAMMA	85GAU 04
0.81	0.01		GAMMA	84KRI 01
0.85	0.08		GAMMA	84GLA 02
0.96	0.12		GAMMA	84GLA 11
Eu-152 (pCi/g)				
1.16	0.12		GAMMA	84GLA 11
Eu-154 (pCi/g)				
< 0.3			GAMMA	84GLA 11
K-40 (pCi/g)				
15.13	0.63		GAMMA	84KRI 01

Conc	Uncer	Com	Method	Reference
Pu-238 (fCi/g)				
< 10			RAS	86GAU 01
0.2	0.8		AS	84GLA 02
Pu-239 (pCi/g)				
0.0116	0.0025		AS	84GLA 02
0.015			RAS	86GAU 01
Ra-226 (pCi/g)				
1.99	0.21		GAMMA	84KRI 01
Th-228 (pCi/g)				
1.03	0.03		AS	85JOS 01
Th-230 (pCi/g)				
0.67	0.05		AS	85JOS 01
0.8			AS	84GLA 02
Th-232 (pCi/g)				
1.07	0.06		AS	85JOS 01
U (ug/g)				
2.43	0.05		DNA	85GAU 04

TABLE 4351-1: COMPILED DATA FOR NBS SRMs 4351 and 4352 ENVIRONMENTAL RADIOACTIVITY
(Human Lung and Human Liver)

ELEMENT	UNITS	NBS	
		4351 (lung) Mean ± SD	4352 (liver) Mean ± SD
Am-241	mBq/g	0.11	0.15 ± 0.06
Am-241	pCi/g	0.003	0.0040 ± 0.0015
Pu-238	mBq/g	---	0.055 ± 0.024
Pu-238	pCi/g	---	0.0015 ± 0.0006
Pu-238/239	ratio	0.0150 ± 0.0030	---
Pu-239	mBq/g	1.1 ± 1.2	2.06 ± 0.39
Pu-239	pCi/g	0.0030 ± 0.0003	0.0556 ± 0.0106
Th-228	mBq/g	0.22	0.51
Th-228	pCi/g	0.0059	0.014
Th-230	mBq/g	0.2	0.2
Th-230	pCi/g	0.0054	0.0054
Th-232	mBq/g	0.21 ± 0.03	0.058
Th-232	pCi/g	0.0057 ± 0.0007	0.0016
U-234	mBq/g	0.10 ± 0.025	0.1
U-234	pCi/g	0.0027 ± 0.0007	0.0027
U-235	mBq/g	---	0.009
U-235	pCi/g	---	0.0002
U-238	mBq/g	0.100 ± 0.011	0.088
U-238	pCi/g	0.0027 ± 0.0003	0.0024

TABLE 4353-1: COMPILED DATA FOR NBS SRM 4353 ENVIRONMENTAL RADIOACTIVITY - ROCKY FLATS SOIL #1 (revised 3/1/86)
(Activity as of 15 Dec. 1980)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean ± SD (n)	MEDIAN	RANGE	METHOD MEANS Mean ± SD (n) Method
Ac-228	mBq/g	69.8 ± 3.6	---	---	---	---
Ac-228	pCi/g	1.88 ± 0.10	2.48 (1)	---	---	2.48 (1) GAMMA
Am-241	mBq/g	1.25 ± 0.09	---	---	---	---
Am-241	pCi/g	0.0338 ± 0.0025	0.035 ± 0.008 (4)	0.0350	0.024 - 0.042	0.039 ± 0.004 (3) AS
Am-241	pCi/g	---	---	---	---	0.024 (1) GAMMA
Cs-137	mBq/g	17.6 ± 0.8	---	---	---	---
Cs-137	pCi/g	0.464 ± 0.021	0.56 ± 0.08 (4)	0.52	0.48 - 0.67	0.5575 ± 0.0818 (4) GAMMA
Fe-55	mBq/g	2.49	---	---	---	---
Fe-55	pCi/g	0.0670	---	---	---	---
K-40	mBq/g	723 ± 70	---	---	---	---
K-40	pCi/g	19.5 ± 1.9	25 (1)	---	---	25 (1) GAMMA
Pu-238	mBq/g	0.166 ± 0.018	---	---	---	---
Pu-238	pCi/g	0.0045 ± 0.0005	0.0038 (2)	---	0.0035 - 0.0040	0.0038 (2) AS
Pu-239	mBq/g	8.03 ± 0.60	---	---	---	---
Pu-239	pCi/g	0.217 ± 0.016	0.214 ± 0.008 (7)	0.212	0.202 - 0.221	0.214 ± 0.008 (7) AS
Ra-226	mBq/g	43.0 ± 2.8	---	---	---	---
Ra-226	pCi/g	1.16 ± 0.08	1.03 (1)	---	---	1.03 (1) GAMMA
Sr-90	mBq/g	7.63 ± 0.78	---	---	---	---
Sr-90	pCi/g	0.206 ± 0.021	---	---	---	---
Th-228	mBq/g	70.8 ± 3.6	---	---	---	---
Th-228	pCi/g	1.91 ± 0.1	1.97 (1)	---	---	1.97 (1) AS
Th-230	mBq/g	44.3 ± 2.3	---	---	---	---
Th-230	pCi/g	1.20 ± 0.06	1.04 (2)	---	0.88 - 1.2	1.04 (2) AS
Th-232	mBq/g	69.3 ± 3.5	---	---	---	---
Th-232	pCi/g	1.87 ± 0.10	1.93 (1)	---	---	1.93 (1) AS
U	ug/g	---	3.04 (1)	---	---	3.04 (1) NAA
U-234	mBq/g	39.1 ± 1.4	---	---	---	---
U-234	pCi/g	1.06 ± 0.04	---	---	---	---
U-235	mBq/g	1.9	---	---	---	---
U-235	pCi/g	0.051	---	---	---	---
U-238	mBq/g	38.9 ± 2.0	---	---	---	---
U-238	pCi/g	1.05 ± 0.05	1.45 (1)	---	---	1.45 (1) GAMMA

TABLE 4353-2: INDIVIDUAL DATA FOR NBS SRM 4353 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference
Ac-228 (pCi/g)				
2.48	0.57		GAMMA	83KIM 01
Am-241 (pCi/g)				
0.024			GAMMA	86GAU 01
0.035	0.004		RAS	85GAU 04
0.04	0.004		RAS	84GLA 11
0.042	0.008		AS	84GLA 02
Cs-137 (pCi/g)				
0.48	0.04		GAMMA	86GAU 01
0.52	0.06		GAMMA	84GLA 02
0.56	0.05		GAMMA	85GAU 04
0.67	0.1		GAMMA	84GLA 11
K-40 (pCi/g)				
25			GAMMA	86GAU 01
Pu-238 (pCi/g)				
<	0.01		RAS	86GAU 01
0.0035	0.0019		AS	84GLA 02
0.004	0.002		RAS	84GLA 11

Conc	Uncer	Com	Method	Reference
Pu-239 (pCi/g)				
0.169	0.014	11	AS	85YAM 02
0.202	0.039		AS	84GLA 02
0.207	0.014	11	AS	85YAM 02
0.212	0.011	11	AS	85YAM 02
0.218	0.014	11	AS	85YAM 02
0.22	0.02		RAS	86GAU 01
0.22	0.02		RAS	84GLA 11
0.221	0.017	11	AS	85YAM 02
Ra-226 (pCi/g)				
1.03	0.16		GAMMA	83KIM 01
Th-228 (pCi/g)				
1.97	0.04		AS	85JOS 01
Th-230 (pCi/g)				
0.88	0.05		AS	85JOS 01
1.2			AS	84GLA 02
Th-232 (pCi/g)				
1.93	0.08		AS	85JOS 01
U (ug/g)				
3.04	0.07		DNA	85GAU 04
U-238 (pCi/g)				
1.45	0.49		GAMMA	83KIM 01

TABLE 4355-1: COMPILED DATA FOR NBS SRM 4355 ENVIRONMENTAL RADIOACTIVITY - PERUVIAN SOIL (revised 3/1/86)
(Activity as of 1 June 1982)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean (n)	METHOD
Ag	ug/g	1.9	---	---
Al	%	8.19 ± 0.28	---	---
Am-241	mBq/g	0.004 ± 0.001	---	---
Am-241	pCi/g	0.0001	---	---
As	ug/g	93.9 ± 7.5	---	---
B	ug/g	63	---	---
Ba	ug/g	561 ± 53	---	---
Be	ug/g	1.77 ± 0.27	---	---
Bi	ug/g	12	---	---
Bi-214	mBq/g	40	---	---
Bi-214	pCi/g	1.2	---	---
Br	ug/g	5.4 ± 1.0	---	---
Ca	%	2.2	---	---
Cd	ug/g	1.5	---	---
Ce	ug/g	59.3 ± 3.0	---	---
Co	ug/g	14.8 ± 0.76	---	---
Co-60	mBq/g	< 0.016	---	---
Co-60	pCi/g	< 0.0004	---	---
Cr	ug/g	28.9 ± 2.8	---	---
Cs	ug/g	56.7 ± 3.3	---	---
Cs-137	mBq/g	0.33 ± 0.04	---	---
Cs-137	pCi/g	0.0090 ± 0.0011	---	---
Cu	ug/g	77.1 ± 4.7	---	---
Dy	ug/g	4 ± 1	---	---
Eu	ug/g	1.18 ± 0.08	---	---
Eu-152	mBq/g	< 0.23	---	---
Eu-152	pCi/g	< 0.0063	---	---
Eu-154	mBq/g	< 0.2	---	---
Eu-154	pCi/g	< 0.006	---	---
Eu-155	mBq/g	< 0.2	---	---
Eu-155	pCi/g	< 0.006	---	---
F	ug/g	682	---	---
Fe	%	4.45 ± 0.19	---	---
Fe-55	mBq/g	2.0	---	---
Fe-55	pCi/g	0.05	---	---
Ga	ug/g	18.4 ± 1.6	---	---
Gd	ug/g	35	---	---
Hf	ug/g	6.3 ± 0.3	---	---
Hg	ug/g	0.79	---	---
Ho	ug/g	0.82	---	---
K	%	1.86 ± 0.15	---	---
K-40	mBq/g	585	---	---
K-40	pCi/g	16	---	---
La	ug/g	28.1 ± 1.5	---	---
Li	ug/g	52 ± 33	---	---
Lu	ng/g	336 ± 44	---	---

TABLE 4355-1: COMPILED DATA FOR NBS SRM 4355 ENVIRONMENTAL RADIOACTIVITY - PERUVIAN SOIL (cont.)

ELEMENT	UNITS	NBS Mean ± SD	CONSENSUS Mean (n)	METHOD
Mg	%	1.5	---	---
Mg	ug/g	852 ± 37	---	---
Mo	ug/g	1.7	---	---
Na	%	1.92 ± 0.11	---	---
Nb	ug/g	9	---	---
Nd	ug/g	29.9 ± 1.6	---	---
Ni	ug/g	13	---	---
P	ug/g	1100	---	---
Pb	ug/g	129 ± 26	---	---
Pr	ug/g	5	---	---
Pu-238	mBq/g	0.003	---	---
Pu-238	pCi/g	< 0.0001	---	---
Pu-239	mBq/g	0.0076 ± 0.0021	---	---
Pu-239	pCi/g	0.0002 ± 0.0001	---	---
Rb	ug/g	138 ± 7.4	---	---
Sb	ug/g	14.3 ± 2.2	---	---
Sb-125	mBq/g	< 0.14	---	---
Sb-125	pCi/g	< 0.0038	---	---
Sc	ug/g	14.8 ± 0.66	---	---
Se	ug/g	1.4	---	---
Si	%	33	---	---
Sm	ug/g	5.42 ± 0.39	---	---
Sr	ug/g	330	---	---
Sr-90	mBq/g	0.22	---	---
Sr-90	pCi/g	0.006	---	---
Ta	ng/g	764 ± 56	---	---
Tb	ng/g	665 ± 75	---	---
Th	ug/g	11.3 ± 0.73	---	---
Th-228	mBq/g	42.2 ± 2.1	---	---
Th-228	pCi/g	1.15 ± 0.06	1.17 (1)	AS
Th-230	mBq/g	39.7 ± 2	---	---
Th-230	pCi/g	1.08 ± 0.06	0.99 (1)	AS
Th-232	pCi/g	1.17 ± 0.06	1.21 (1)	AS
Ti	ug/g	4700	---	---
Tl-208	mBq/g	12	---	---
Tl-208	pCi/g	0.33	---	---
Tm	ng/g	420	---	---
U	ug/g	3.04 ± 0.51	2.82 (2)	NAA
V	ug/g	151	---	---
W	ug/g	5.1	---	---
Y	ug/g	21	---	---
Yb	ug/g	2.24 ± 0.2	---	---
Zn	ug/g	368 ± 8.2	---	---
Zr	ug/g	221	---	---

TABLE 4355-2: INDIVIDUAL DATA FOR NBS SRM 4355 (revised 3/1/86)

Conc	Uncer	Com	Method	Reference	Conc	Uncer	Com	Method	Reference
Th-228 (pCi/g)					Th-232 (pCi/g)				
1.17	0.03		AS	85JOS 01	1.21	0.06		AS	85JOS 01
Th-230 (pCi/g)					U (ug/g)				
0.99	0.05		AS	85JOS 01	2.75	0.09		DNA	85GAU 04
					2.88	0.05		DNA	85GLA 04

TABLE 8412-1: COMPILED DATA FOR NBS RMs 8412 and 8413 CORN STALK AND KERNEL (revised 3/1/87)

ELEMENT	UNITS	NBS	
		8412 Mean ± SD	8413 Mean ± SD
Al	ug/g	---	4 ± 2
Ca	ug/g	2160 ± 80	42 ± 5
Cl	ug/g	2440 ± 140	450 ± 120
Cu	ug/g	8 ± 1	3.0 ± 0.6
F	ng/g	650 ± 130	240 ± 20
Fe	ug/g	139 ± 15	23 ± 5
K	%	1.735 ± 0.047	3570 ± 370
Mg	ug/g	1600 ± 70	990 ± 82
Mn	ug/g	15 ± 2	4.0 ± 0.3
N	%	0.697 ± 0.032	1.375 ± 0.043
Na	ug/g	28 ± 8	---
Se	ng/g	16 ± 8	4 ± 2
Sr	ug/g	12 ± 2	---
Zn	ug/g	32 ± 3	15.7 ± 1.4

TABLE 8030-1: COMPILED DATA FOR NBS RM 8030 TRACE ELEMENTS IN AN AQUATIC PLANT LAGAROSIPHON MAJOR (revised 8/1/87)
Community Bureau of Reference BCR No. 60

Element	Units	NBS Mean ± SD
Ag	ng/g	200
Al	ug/g	6140
As	ug/g	8
Au	ng/g	20
B	ug/g	25
Br	ug/g	20
Ca	%	3.10
Cd	ug/g	2.20 ± 0.10
Ce	ug/g	4
Cl	%	1.0
Co	ug/g	4
Cr	ug/g	26
Cs	ng/g	400
Cu	ug/g	51.2 ± 1.9
Eu	ng/g	170
F	ug/g	24
Fe	ug/g	2380
Hg	ng/g	340 ± 40
K	%	1.14
La	ug/g	2
Mg	ug/g	6030
Mn	ug/g	1759 ± 51
Mo	ug/g	2
N	%	4.12
Na	ug/g	6700
Ni	ug/g	40
P	ug/g	5140
Pb	ug/g	63.8 ± 3.2
Rb	ug/g	23
S	ug/g	5200
Sb	ng/g	400
Sc	ng/g	500
Se	ng/g	700
Si	%	2.85
Sn	ug/g	6
Ta	ng/g	100
Tb	ng/g	100
Ti	ug/g	240
Tl	ng/g	240
U	ng/g	300
V	ug/g	6
W	ug/g	20
Zn	ug/g	313 ± 8

TABLE 8031-1: COMPILED DATA FOR NBS RM 8031 TRACE ELEMENTS IN AN AQUATIC MOSS PLATIHYPNIDIUM RIPARIOIDES
(revised 8/1/87)
Community Bureau of Reference BCR No. 61

Element	Units	NBS Mean ± SD
Ag	ug/g	2
Al	%	1.71
As	ug/g	7
Au	ng/g	220
B	ug/g	77
Br	ug/g	22
Ca	%	1.70
Cd	ug/g	1.07 ± 0.08
Ce	ug/g	12
Cl	ug/g	2300
Co	ug/g	43
Cr	ug/g	532
Cs	ng/g	600
Cu	ug/g	720 ± 31
Eu	ng/g	200
F	ug/g	60
Fe	%	0.93
Hg	ng/g	230 ± 20
K	%	1.24
La	ug/g	5
Mg	ug/g	3900
Mn	ug/g	3771 ± 78
Mo	ug/g	11
N	%	3.35
Na	ug/g	3000
Ni	ug/g	420
P	%	0.92
Pb	ug/g	64.4 ± 3.5
Rb	ug/g	32
S	ug/g	2300
Sb	ug/g	1
Sc	ug/g	1
Se	ug/g	1
Si	%	7.52
Sn	ug/g	13
Ta	ng/g	500
Tb	ng/g	200
Ti	ug/g	780
Tl	ng/g	130
U	ng/g	260
V	ug/g	6
W	ug/g	239
Zn	ug/g	566 ± 13

TABLE 8032-1: COMPILED DATA FOR NBS RM 8032 TRACE ELEMENTS IN A CALCAREOUS LOAM SOIL (revised 8/1/87)
Community Bureau of Reference BCR No. 141

Element	Units	NBS Mean ± SD
Al	%	5.59
As	ug/g	8
Ba	ug/g	243
Br	ug/g	3.5
Ca	%	12.86
Cd	ng/g	360 ± 100
Ce	ug/g	81
Cu	ug/g	32.6 ± 1.4
Eu	ug/g	0.9
Fe	%	2.61
Ga	ug/g	14
Hf	ug/g	3.7
Hg	ng/g	56.8 ± 4.3
K	%	1.29
La	ug/g	27
LOI	%	20.65
Mg	ug/g	7180
Na	ug/g	3200
Nb	ug/g	10
P	ug/g	700
Pb	ug/g	29.4 ± 2.6
Rb	ug/g	95
Sb	ng/g	600
Sc	ug/g	8.4
Si	%	19.88
Sm	ug/g	6.3
Sn	ug/g	4.0
Sr	ng/g	460
Th	ug/g	10.3
Ti	ug/g	2800
W	ug/g	1.4
Y	ug/g	24
Yb	ug/g	2.1
Zn	ug/g	81.3 ± 3.7
Zr	ug/g	120

TABLE 8033-1: COMPILED DATA FOR NBS RM 8033 TRACE ELEMENTS IN A LIGHT SANDY SOIL (revised 8/1/87)
Community Bureau of Reference BCR No. 142

Element	Units	NBS Mean ± SD
Al	%	5.01
As	ug/g	16
Ba	ug/g	450
Br	ug/g	6
Ca	%	3.53
Cd	ng/g	250 ± 90
Ce	ug/g	80
Cu	ug/g	27.5 ± 0.6
Dy	ug/g	5.15
Er	ug/g	2.84
Eu	ug/g	1.0
Fe	%	1.96
Ga	ug/g	11
Gd	ug/g	5.7
Hf	ug/g	12
Hg	ng/g	104 ± 12.3
K	%	2.00
La	ug/g	32
Lu	ng/g	410
Mg	ug/g	6570
Na	ug/g	7200
Nb	ug/g	14
Nd	ug/g	28
Ni	ug/g	29.2 ± 2.5
P	ug/g	960
Pb	ug/g	37.8 ± 1.9
Rb	ug/g	105
Sb	ug/g	2.5
Sc	ug/g	8.2
Si	%	31.86
Sm	ug/g	6.8
Sn	ug/g	4
Sr	ug/g	164
Th	ug/g	11.9
Ti	ug/g	3700
W	ug/g	1.2
Y	ug/g	30.4
Yb	ug/g	2.77
Zn	ug/g	92.4 ± 4.4
Zr	ug/g	390

TABLE 8034-1: COMPILED DATA FOR NBS RM 8034 TRACE ELEMENTS IN A SEWAGE SLUDGE (revised 8/1/87)
Community Bureau of Reference BCR No. 144

Element	Units	NBS Mean ± SD
Ag	ug/g	13
Al	%	2.42
As	ug/g	6.7
Au	ug/g	1
B	ug/g	61
Be	ng/g	660
Bi	ug/g	16
Br	ug/g	9
Ca	%	4.06
Cd	ug/g	3.41 ± 0.25
Ce	ug/g	14
Co	ug/g	9.06 ± 0.60
Cu	ug/g	713 ± 26
Fe	%	4.43
Ga	ug/g	5
Hg	ug/g	1.49 ± 0.22
K	ug/g	6500
Mg	ug/g	5500
Mn	ug/g	449 ± 13
Mo	ug/g	4
Na	ug/g	3400
Nb	ug/g	3
Ni	ug/g	942 ± 22
P	%	2.21
Pb	ug/g	495 ± 19
Rb	ug/g	14
Sc	ug/g	1.5
Si	%	6.37
Sn	ug/g	98
Ti	ug/g	1140
Tl	ng/g	490
V	ug/g	14
W	ug/g	7
Y	ug/g	5
Zn	ug/g	3143 ± 103
Zr	ug/g	56

TABLE 8035-1: COMPILED DATA FOR NBS RM 8035 TRACE ELEMENTS IN A SEWAGE SLUDGE OF MAINLY INDUSTRIAL ORIGIN
(revised 8/1/87)
Community Bureau of Reference BCR No. 146

Element	Units	NBS Mean ± SD
Ag	ug/g	203
Al	%	4.76
As	ug/g	5.1
Au	ug/g	3.6
B	ug/g	50
Be	ug/g	5.4
Br	ug/g	6
Ca	%	10.2
Cd	ug/g	77.7 ± 2.6
Ce	ug/g	100
Co	ug/g	11.8 ± 0.7
Cu	ug/g	934 ± 24
Fe	%	1.85
Ga	ug/g	6
Hg	ug/g	9.49 ± 0.76
K	ug/g	4800
La	ug/g	14
LOI	%	37.7
Mg	%	2.0
Mn	ug/g	588 ± 24
Mo	ug/g	10
Na	ug/g	2200
Nb	ug/g	15
Ni	ug/g	280 ± 18
P	%	2.57
Pb	ug/g	1270 ± 28
Rb	ug/g	27
Sc	ug/g	2.4
Si	%	10.6
Ti	%	1.74
Tl	ug/g	1.2
V	ug/g	35
W	ug/g	6
Zn	ug/g	4059 ± 90
Zr	ug/g	9

TABLE 8036-1: COMPILED DATA FOR NBS RM 8036 TRACE ELEMENTS IN A SPIKED SKIM MILK POWDER (revised 8/1/87)
Community Bureau of Reference BCR No. 150

Element	Units	NBS Mean ± SD
Cd	ng/g	21.8 ± 1.4
Co	ng/g	6.4
Cu	ug/g	2.23 ± 0.08
Fe	ug/g	11.8 ± 0.6
Hg	ng/g	9.4 ± 1.7
I	ug/g	1.29 ± 0.09
Mn	ng/g	236
Ni	ng/g	61.5
Pb	ug/g	1.00 ± 0.04
Se	ng/g	127
Tl	ng/g	1.0
Zn	ug/g	49.4

TABLE 8431-1: COMPILED DATA FOR NBS RM 8431 MIXED DIET (revised 3/1/87)

ELEMENT	UNITS	NBS Mean ± SD
Al	ug/g	4.39 ± 1.07
As	ug/g	0.92 ± 0.34
Ca	ug/g	1940 ± 140
Cd	ng/g	42 ± 11
Co	ng/g	38 ± 8
Cr	ng/g	102 ± 6
Cu	ug/g	3.36 ± 0.33
Fe	ug/g	37.0 ± 2.6
K	ug/g	7900 ± 4200
Mg	ug/g	650 ± 40
Mn	ug/g	8.12 ± 0.31
Mo	ng/g	288 ± 29
Na	ug/g	3120 ± 160
Ni	ng/g	644 ± 151
P	ug/g	3320 ± 310
Se	ng/g	242 ± 30
Zn	ug/g	17.0 ± 0.6
ASH	%	3.00 ± 0.09
Calorie	Cal/100 g	436
Fat	%	9.5 ± 0.92
Fructose	%	5.8
Glucose	%	6.5
Lactose	%	3.7
Maltose	%	1.8
Phytate	mg/g	2.10
Protein	%	19.1 ± 0.6
Starch	%	24.6 ± 5.0
Sucrose	%	11.1
Total Sugar	%	28.3 ± 1.7
Total Fiber	%	5.3

Appendix

References for NBS SRM Collected Data

CODE	N	REFERENCE
55COL	01	M. E. Coller and R. K. Leininger (1955) Determination of Total Sulfur Content of Sedimentary Rocks by a Combustion Method, Analytical Chemistry, 27: 949-951.
57SHI	01	N. F. Shimp, J. Connor, A. Prince, and F. Bear (1957) Spectrochemical Analysis of Soils and Biological Materials, Soil Science, 83: 51-64.
58GRA	01	R. J. Grabowski and R. C. Unice (1958) Quantitative Spectrochemical Determination of Barium and Strontium, Analytical Chemistry, 30: 1374-1379.
58WAT	01	H. L. Watts (1958) Volumetric Determination of Aluminium in the Presence of Iron, Titanium, Calcium, Silicon, and other Impurities, Analytical Chemistry, 30: 967-970.
59COL	01	P. F. Collins, H. Diehl, and G. F. Smith (1959) Determination of Iron in Limestone, Silicates, and Refractories, Analytical Chemistry, 31: 1862-1867.
61TUR	01	K. K. Turekian and M. H. Carr (1961) Chromium, Cobalt, and Strontium in some Bureau of Standards Rock Reference Samples, Geochimica et Cosmochimica Acta, 24: 1-9.
62JOE	01	O. I. Joensuu and N. H. Suhr (1962) Spectrochemical Analysis of Rocks, Minerals, and Related Materials, Applied Spectroscopy, 16: 101-104.
63CLA	01	M. C. Clark and D. J. Swaine (1963) Trace Element Contents of the National Bureau of Standards Reference Samples Numbers 1A, 98, and 99, Geochimica et Cosmochimica Acta, 27: 1139-1142.
63KOR	01	J. Korkisch, G. Arrhenius, and D. P. Kharkar (1963) Spectrophotometric Determination of Titanium After Separation by Anion Exchange, Analytica Chimica Acta, 28: 270-277.
64FIL	01	R. H. Filby (1964) The Contents of Several Trace Elements in Some Standard Rock Samples, Geochimica et Cosmochimica Acta, 28: 265-269.
65BAL	01	T. K. Ball and R. H. Filby (1965) The Zinc Contents of Some Geochemical Standards by Neutron Activation and X-ray Fluorescence Analysis, Geochimica et Cosmochimica Acta, 29: 737-740.
65MTA	01	Proceedings of the 1965 Internationl Conference on Modern Trends in Activation Analysis, College Station, Texas.
65WAH	01	W. H. Wahl, V. J. Molinski, and H. Arino (1965) Rapid Radiochemical Separation Procedures for Activation Analysis Indicators, in 65MTA 01, pp. 44-47.
65WEL	01	N. Wells (1965) Selenium Content of Soil-Forming Rocks, New Zealand Journal of Geology and Geophysics, 10: 198-208; taken from 74CRE 01.
66HAM	01	E. I. Hamilton (1966) The Uranium Content of Some International Standards, Earth and Planetary Science Letters, 1: 317-318.
67KOD	01	H. Kodama, J. E. Brydon, and B. C. Stone (1967) X-ray Spectrochemical Analysis of Silicates using Synthetic Standards with a Correction of Interelemental Effects by a Computer Method, Geochimica et Cosmochimica Acta, 31: 649-659.
69COM	01	W. Compston, B. Chappell, P. Arriens, and M. Vernon (1969) On the Feasibility of NBS 70A K-Feldspar as a Rb-Sr Age Reference Sample, Geochimica et Cosmochimica Acta, 33: 753.
69EDM	01	C. R. Edmond (1969) Direct Determination of Fluoride in Phosphate Rock Samples, Using the Specific Ion Electrode, Analytical Chemistry, 41: 1327-1328.
69LAE	01	J. R. de Laeter, I. D. Aberchrombie, and R. Date (1969) Mass Spectrometric Isotope Dilution Analyses of Barium in Standard Rocks, Earth and Planetary Science Letters, 7: 64.
69THI	01	G. Thielicke (1969) Titrimetrische Bestimmung des Aluminiums in Silicatgesteinen mit Potentiometrischer Indikation, Fresenius Zeitschrift fur Analytische Chemie, 246: 118-122.
69WIC	01	R. Wickbold (1969) Extraktion des Eisens mit Methylisobutylketon und seine Titration im Extrakt mit ADTA, Fresenius Zeitschrift fur Analytische Chemie, 244: 372-375.
70ING	01	B. L. Ingram (1970) Determination of Fluoride in Silicate Rocks Without Separation of Aluminium using a Specific Ion Electrode, Analytical Chemistry, 42: 1825-1827.
70LAE	01	J. R. de Laeter and I. D. Aberchrombie (1970) Mass Spectrometric Isotope Dilution Analyses of Rubidium and Strontium in Standard Rocks, Earth and Planetary Science Letters, 9: 327-330.
71FAB	01	B. P. Fabbi (1971) Rapid X-ray Fluorescence Determination of Phosphorus in Geological Samples, Applied Spectroscopy, 25: 41-43.
71HEI	02	R. H. Heidel (1971) Precision and Detection Limits of Certain Minor and Trace Elements in Silicates by Electron Microprobe Analysis, Analytical Chemistry, 43: 1907-1908.
71PET	01	M. A. Peters and D. M. Ladd (1971) Determination of Fluoride in Oxides with the Fluoride-ion Activity Electrode, Talanta, 18: 655-664.
72ALL	01	W. J. F. Allen (1972) The Determination of Rubidium and Caesium in Geological Materials by Atomic Emission Spectrophotometry with a Nitrous Oxide-Acetylene Flame, Analytica Chimica Acta, 59: 111-117.
72ARU	01	P. J. Aruscavage and H. T. Millard (1972) A Neutron Activation Procedure for the Determination of Uranium, Thorium, and Potassium in Geological Samples, Journal of Radioanalytical Chemistry, 11: 67-84.
72ASH	01	D. G. Ashley and K. W. Andrews (1972) Analysis of Aluminosilicate Materials by X-ray Fluorescence Spectrometry, Analyst, 97: 841-845.
72AVN	01	R. Avni, A. Harel, and I. B. Brenner (1972) A New Approach to the Spectrochemical Analysis of Silicate Rocks and Minerals, Applied Spectroscopy, 26: 641-645.
72BEC	03	D. A. Becker and P. D. LaFleur (1972) Determination of Trace Quantities of Uranium in Biological Materials by Neutron Activation Analysis using a Rapid Radiochemical Separation, Analytical Chemistry, 44: 1508.

CODE	N	REFERENCE
72BOU	01	J. L. Bouvier, J. G. Sen Gupta, and S. Abbey (1972) Title Unknown, Geological Survey of Canada paper 72-31, p. 22; taken from 77LAN 01.
72BOW	01	H. J. M. Bowen (1972) The Determination of Tin in Biological Material by using Neutron Activation Analysis, Analyst, 97: 1003-1005.
72BYR	01	A. R. Byrne (1972) The Toluene Extraction of Some Elements as Iodides from Sulfuric Acid-Potassium Iodide Media: Application to Neutron Activation Analysis, Analytica Chimica Acta, 59: 91-99.
72CAR	01	B. S. Carpenter (1972) Determination of Trace Concentration of Boron and Uranium in Glass by Nuclear Track Technique, Analytical Chemistry, 44: 600-602.
72DAM	01	D. Damsgaard, K. Heydorn, and B. Rietz (1972) Determination of Vanadium in Biological Materials by Neutron Activation Analysis, in 72IAE 01, pp. 119-130.
72GIB	01	D. Gibbons, M. Perkins, and T. W. Sanders (1972) Determination of Lead in Biological Materials by Neutron Activation Analysis, in 72IAE 01, pp. 131-138.
72HEI	01	M. W. Heitzman and R. E. Simpson (1972) Neutron Activation Analysis of Mercury in Fish, Flour, and Standard Reference Orchard Leaves by Electrodeposition Radiochemistry, Journal of the Association of Official Analytical Chemists, 55: 960-965.
72IAE	01	International Atomic Energy Agency (1972) Nuclear Activation Techniques in the Life Sciences, Proceedings of a Symposium held in Bled, Yugoslavia, STI/PUB/310.
72JON	03	J. B. Jones and R. A. Issac (1972) Determination of Sulfur in Plant Material using a LECO Sulfur Analyzer, Journal of Agricultural and Food Chemistry, 20: 1292-1294.
72LEV	01	M. Levstek, L. Kosta, M. Dermelj, and A. R. Byrne (1972) Vanadium Determination in Biological Materials by the use of Preconcentration, in 72IAE 01, pp. 111-116.
72LYO	01	W. S. Lyon, L. C. Bate, and J. F. Emery (1972) Environmental Pollution: Use of Neutron Activation Analysis to Determine the Fate of Trace Elements from Fossil Fuel Combustion in the Ecological Cycle, in 72IAE 01, pp.253-261.
72MAG	01	C. W. Magee, D. L. Donohur, and W. W. Harrison (1972) Advantages of Dual Electrode Mounts in Spark Source Mass Spectrometry using Electrical Detection, Analytical Chemistry, 44: 2413-2415.
72MAI	01	E. J. Maienthal (1972) Analysis of Botanical Standard Reference Materials by Cathode Ray Polarography, Journal of the Association of Official Analytical Chemists, 55: 1109-1113.
72MOR	03	G. H. Morrison and N. M. Potter (1972) Multielement Neutron Activation Analysis of Biological Material using Chemical Group Separations and High Resolution Gamma-ray Spectrometry, Analytical Chemistry, 44: 839-842.
72RAI	01	T. C. Rains and O. Menis (1972) Determination of Submicrogram Amounts of Mercury in Standard Reference Materials by Flameless Atomic Absorption Spectrometry, Journal of the Association of Official Analytical Chemists, 55: 1339-1344.
72ROO	01	H. L. Rook, P. D. LaFleur, and T. E. Gills (1972) Mercury in Coal: A New Standard Reference Material, Environmental Letters, 2: 195-204.
72ROO	02	H. L. Rook, T. E. Gills, and P. D. LaFleur (1972) Method for Determination of Mercury in Biological Materials by Neutron Activation Analysis, Analytical Chemistry, 44: 1114-1117.
72ROO	03	H. L. Rook (1972) Rapid, Quantitative Separation for the Determination of Selenium using Neutron Activation, Analytical Chemistry, 44: 1276-1278.
72ROS	02	J. N. Rosholt (1972) Private Communication; taken from 72ARU 01.
72SAN	01	P. M. Santoliquido and R. R. Ruch (1972) Rapid Radiochemical Separation and Determination of Gallium in Coal Ash, Radiochemical and Radioanalytical Letters, 12: 71-76.
72SEI	01	W. R. Seitz and D. M. Hercules (1972) Determination of Trace Amounts of Iron(II) using Chemiluminescence Analysis, Analytical Chemistry, 44: 2143-2148.
72SIN	01	I. Sinko and L. Kosta (1972) Determination of Lead, Cadmium, Copper, and Zinc in Biological Materials by Anodic Stripping Polarography, International Journal of Environmental Analytical Chemistry, 2: 167-178.
73ABE	01	K. H. Abel and L. A. Rancitelli (1973) Major, Minor, and Trace Element Composition of Coal and Fly Ash, as Determined by Instrumental Neutron Activation Analysis, in 73BAB 01, pp. 118-138.
73BAB	01	S. P. Babu, editor (1973) Trace Elements in Fuel, Advances in Chemistry Series 141, American Chemical Society, Washington, D. C.
73BAR	01	I. L. Barnes, E. Garner, J. Gramlich, L. Moore, T. Murphy, L. Machlan, W. Shields, M. Tatsumoto, and R. Knight (1973), Determination of Lead, Uranium, Thorium, and Thallium in Silicate Glass Standard Materials by Isotope Dilution Mass Spectrometry, Analytical Chemistry, 45: 880-885.
73BES	01	Y. Besnus and R. Rouault (1973) Une Methode D'Analyse des Roches au Spectrometre D'Arc a Lecture Directe par un Dispositif D'Electrode Rotative, Analusis, 2: 111-116.
73BLA	01	M. S. Black and R. E. Sievers (1973) Environmental Analysis Problems Created by Unexpected Volatile Beryllium Compounds in Various Samples, Analytical Chemistry, 45: 1773-1775.
73BLO	02	A. J. Blotcky, L. J. Arsenault, and E. P. Rack (1973) Optimum Procedure for the Determination of Selenium in Biological Specimens using Se-77m Neutron Activation, Analytical Chemistry, 45: 1056-1060.
73CAR	01	J. A. Carter, D. Matthews, R. Walker, and J. Walton (1973) Measurement of Nitrogen and Nitrogen Isotopic Ratios using Reduction Pyrolysis Coupled with Mass Spectrometry, Analytical Letters, 6: 951-960.
73COR	01	R. Cornelis, A. Speecke, and J. Hoste (1973) A Multielement Serum Standard for Neutron Activation Analysis, Analytica Chimica Acta, 68: 1-10.

CODE	N	REFERENCE
73DAM	01	E. Damsgaard and K. Heydorn (1973) Arsenic in Standard Reference Material 1571 (Orchard Leaves) Presented at the Third Symposium on the Recent Developments in Neutron Activation, Cambridge; also in Danish Atomic Energy Commission report RISO-M-1633.
73GIA	01	R. D. Giauque, F. Goulding, J. Jaklevic, and R. Pehl (1973) Trace Element Determination with Semiconductor Detector X-ray Spectrometers, Analytical Chemistry, 45: 671-681.
73GOE	01	J. de Goeij, V. Guinn, D. Young, and A. Mearns (1973) Activation Analysis Trace Element Studies of Dover Sole Liver and Marine Sediments, IRI report 133-73-09 (Delft).
73HEM	01	D. D. Hemphill, editor (1973) Proceedings of the Seventh Annual Conference on Trace Substances in Environmental Health, University of Missouri, Columbia, Missouri.
73HEY	01	K. Heydorn and E. Damsgaard (1973) Simultaneous Determination of Arsenic, Manganese, and Selenium in Biological Materials by Neutron Activation Analysis, Talanta, 20: 1-11.
73KAR	01	S. S. Karacki and F. L. Corcoran (1973) Coal Ash Analysis with an Argon Plasma Emission Excitation Source, Applied Spectroscopy, 27: 41-42.
73KIM	01	J. I. Kim and H.-J. Born (1973) Monostandard Activation Analysis and its Applications: Analyses of Kale Powder and NBS Standard Glass Samples, Journal of Radioanalytical Chemistry, 13: 427.
73LEB	01	P. J. LeBlanc and A. L. Jackson (1973) Dry Ashing Technique for the Determination of Arsenic in Marine Fish, Journal of the Association of Official Analytical Chemists, 56: 383-386.
73LO	01	F.-C. Lo and B. Bush (1973) Modified Procedure for Determining Mercury in Coal by Cold Vapor Atomic Absorption Spectrophotometry, Journal of the Association of Official Analytical Chemists, 56: 1509-1510.
73LOO	01	J. C. van Loon, J. Lichwa, and D. Ruttan (1973) A Study of the Determination and Distribution of Cadmium in Samples Collected in a Heavily Industralized and Urbanized Region (Metropolitan Toronto), International Journal of Environmental Analytical Chemistry, 3: 147-160.
73LOO	03	J. C. van Loon and J. Lichwa (1973) A Study of the Atomic Absorption Determination of Some Important Heavy Metals in Fertilizers and Domestic Sewage Plant Sludges, Environmental Letters, 4: 1-8.
73MAI	01	E. J. Maienthal (1973) Determination of Trace Elements in Silicate Matrices by Differential Cathode Ray Polarography, Analytical Chemistry, 45: 644-648.
73MOO	01	L. J. Moore, J. Moody, I. Barnes, J. Gramlich, T. Murphy, P. Paulsen, and W. Shields (1973), Trace Determination of Rubidium and Strontium in Silicate Glass Standard Reference Materials, Analytical Chemistry, 45: 2384-2387.
73NAD	01	R. A. Nadkarni and G. H. Morrison (1973) Multielement Instrumental Neutron Activation Analysis of Biological Materials, Analytical Chemistry, 45: 1957-1960.
73PIE	01	J. Pierce, A. Abu-Samra, D. Fehlauer, T. Clevenger, and J. Vogt (1973), Title unknown, in Trace Elements in Relation to Cardiovascular Diseases, IAEA, Vienna, p. 103; taken from 80HEY 01.
73RAM	01	E. R. Rambaldi (1973) Variation in the Composition of Plagioclase and Epidote in some Metamorphic Rocks near Bancroft, Ontario, Canadian Journal of Earth Sciences, 10: 852-868.
73SEG	01	D. A. Segar and J. L. Gilio (1973) The Determination of Trace Transition Elements in Biological Tissues using Flameless Atom Reservoir Atomic Absorption, International Journal of Environmental Analytical Chemistry, 2: 291-301.
73SHA	01	L. Shapiro (1973) Rapid Determination of Sulfur in Rocks, Journal of Research of the U. S. Geological Survey, 1: 81-84.
73SHE	01	D. W. Sheibley (1973) Trace Elements in Instrumental Neutron Activation Analysis for Pollution Monitoring, in 73BAB 01, pp. 98-117.
73SPA	01	C. J. Sparks, O. Cavin, L. Harris, and J. Ogle (1973) Simple, Quantitative X-ray Fluorescent Analysis for Trace Elements, in 73HEM 01, pp. 361-368.
73STE	01	E. Steinnes (1973) Title unknown, in Trace Elements in Relation to Cardiovascular Diseases, IAEA Technical Report 157, p. 149; taken from 78BYR 01.
73TAL	01	Y. Talmi and R. Crosmun (1973) Applicability of the RF-Furnace Technique for AA and AE Analysis of Trace Elements in Environmental Samples, in 73HEM 01, pp. 379-383.
73THO	01	A. D. Thomas and L. E. Smythe (1973) Rapid Destruction of Plant Material with Concentrated Nitric Acid Vapor (Vapor Phase Oxidation), Talanta, 20: 469-475.
73TJI	01	P. S. Tjioe, J. de Goeij, and J. Houtman (1973) Automated Chemical Separations in Routine Activation Analysis, Journal of Radioanalytical Chemistry, 16: 153-164.
74ALV	01	R. Alvarez (1974) Sub-microgram per gram Concentrations of Mercury in Orchard Leaves Determined by Isotope Dilution and Spark-source Mass Spectrometry, Analytica Chimica Acta, 73: 33-38.
74AND	01	L. W. Anderson and L. Acs (1974) Selenium in North American Paper Pulps, Environmental Science and Technology, 8: 462-464.
74AND	03	C. H. Anderson, J. E. Mander, and J. W. Leitner (1974) Advances in X-ray Analysis, Plenum, New York, Vol. 17, p. 214; taken from 82TER 03.
74BEC	01	R. R. Becker, A. Veglia, and E. R. Schmid (1974) Instrumental Neutron Activation Analysis of Standard Biological Materials, Radiochemical and Radioanalytical Letters, 19: 343-354.
74BEL	01	Y. Belot and T. Marini (1974) Analyse par Activation Neutronique des Polluants Atmospheriques Solides Avec une Technique de Standard Interne, Journal of Radioanalytical Chemistry, 19: 319-327.
74BER	01	J. Bergholz, J. Luck, P. Moller, and W. Szacki (1974) Funkenquellen-Massenspektrometrische Analyse des NBS-SRM 610 (3mm) Standards, Fresenius Zeitschrift fur Analytische Chemie, 269: 121.

CODE	N	REFERENCE
74BOP	01	B. Boppel (1974) Bleigehalte von Lebensmitteln. zur Analytik der Bleibestimmung in Lebensmitteln, Fresenius Zeitschrift fur Analytische Chemie, 268: 114-119.
74BRA	03	D. V. Brady, J. Montalvo, J. Jung, and R. Curran (1974) Direct Determination of Lead in Plant Leaves via Graphite Furnace Atomic Absorption, Atomic Absorption Newsletter, 13: 118-119.
74BUS	02	K. W. Busch, N. G. Howell, and G. H. Morrison (1974) Elimination of Interferences in Flame Spectrometry using Spectral Stripping, Analytical Chemistry, 46: 2074-2079.
74BYR	01	A. R. Byrne (1974) Neutron Activation Analysis of Tin in Biological Materials and their Ash using Sn-123 and Sn-125, Journal of Radioanalytical Chemistry, 20: 627-637.
74BYR	02	F. P. Byrne (1974) The Analyst and Accuracy, in 74LAF 01, pp. 123-125.
74BYR	03	A. R. Byrne and L. Kosta (1974) Simultaneous Neutron Activation Determination of Selenium and Mercury in Biological Samples by Volatilization, Talanta, 21: 1083-1090.
74CAR	01	B. S. Carpenter and P. D. LaFleur (1974) Nitrogen Determination in Biological Materials by the Nuclear Track Technique, Analytical Chemistry, 46: 1112.
74CAR	02	B. S. Carpenter (1974) Lithium Determinations by the Nuclear Track Technique, Journal of Radioanalytical Chemistry, 19: 233-234.
74CAR	03	V. Caramella-Crespi, U. Pisani, M. T. Ganzerli-Valentini, S. Meloni, and V. Maxia (1974), Determination of Some Noble Metals and Copper by Destructive Neutron Activation Analysis of Different Matrices, Journal of Radioanalytical Chemistry, 23: 23-31.
74CAR	05	B. S. Carpenter and G. M. Reimer (1974) Homogeneity Considerations in Trace Analysis using the Nuclear Track Technique, in 74LAF 01, pp. 457-459.
74CHA	01	A. Chattopadhyay and R. E. Jervis (1974) Multielement Determination in Market-Garden Soils by Instrumental Photon Activation Analysis, Analytical Chemistry, 46: 1630-1639.
74CHO	02	T. J. Chow, C. C. Patterson, and D. Settle (1974) Occurrence of Lead in Tuna, Nature, 251: 159-161.
74CHU	01	M. R. Church and W. H. Robinson (1974) A Rapid, Routine Atomic Absorption Spectrometry Method for the Determination of Selenium at Sub-microgram Levels in Animal Tissue, International Journal of Environmental Analytical Chemistry, 3: 323-331.
74CHU	03	D. A. Church, T. Hadeishi, L. Leong, R. D. McLaughlin, and B. Zak (1974), Two-chamber Furnace for Flameless Atomic Absorption Spectrometry, Analytical Chemistry, 46: 1352-1355
74COP	01	T. R. Copeland, R. A. Oysteryoung, and R. Skogerboe (1974) Elimination of Copper-Zinc Intermetallic Interferences in Anodic Stripping Voltammetry, Analytical Chemistry, 46: 2093-2097.
74COR	01	R. F. Cormier (1974) Radiometric Age of the Keppoch Formation, Browns Mountain Group, Northern Mainland of Nova Scotia, Canadian Journal of Earth Sciences, 11: 1325-1329.
74CRE	01	G. L. Crenshaw and H. W. Lakin (1974) A Sensitive and Rapid Method for the Determination of Trace Amounts of Selenium in Geological Materials, Journal of Research of the U. S. Geological Survey, 2: 483-487.
74DAU	01	E. H. Daughtrey and W. W. Harrison (1974) Analysis for Trace Levels of Boron by Ion-exchange Hollow Cathode Emission, Analytica Chimica Acta, 72: 225-230.
74DON	01	I. Y. Donev and L. M. Marichkova (1974) Determination of Elements in Standard Material (Bovine Liver SRM 1577), In 74LAF 01, pp. 1293-1303.
74ERD	01	G. Erdtmann and O. Aboulwafa (1974) Selective Chemical Separation Procedures for Activation Analysis: II. Separation of Arsenic by Column Extraction with Tin(II)Ethylxanthate. Determination in Titanium Dioxide of High Antimony Content and in Biological Material, Fresenius Zeitschrift fur Analytische Chemie, 272: 105-114.
74FEL	01	C. Feldman (1974) Perchloric Acid Procedure for Wet-ashing Organics for the Determination of Mercury (and Other Metals), Analytical Chemistry, 46: 1606-1609.
74FIT	01	W. F. Fitzgerald, W. B. Lyons, and C. D. Hunt (1974) Cold-trap Preconcentration Method for the Determination of Mercury in Sea Water and in Other Natural Materials, Analytical Chemistry, 46: 1882-1885.
74FLO	01	T. M. Florence, Y. J. Farrar, L. Dale, and G. Batley (1974) Beryllium Content of NBS Standard Reference Orchard Leaves, Analytical Chemistry, 46: 1874-1876.
74FRI	01	M. H. Friedman, E. Miller, and J. T. Tanner (1974) Instrumental Neutron Activation Analysis for Mercury in Dogs Administered Methylmercury Chloride: Use of a Low Energy Photon Detector, Analytical Chemistry, 46: 236-239.
74GAL	01	M. Gallorini and E. Orvini (1974) Determination of Zinc in Environmental Matrices: A Comparison of Results Obtained by Independent Methods, In 74LAF 01, pp. 239-245.
74GOE	01	J. J. M. de Goeij, V. Guinn, D. Young, and A. Mearns (1974) Neutron Activation Analysis Trace Element Studies of Dover Sole Liver and Marine Sediments, In Comparative Studies of Food and Environmental Contamination, Proceeding Series, International Atomic Energy Agency, Vienna, pp. 193-196.
74GRO	01	S. B. Gross and E. S. Parkinson (1974) Analysis of Metals in Human Tissues using Base (TMAH) Digests and Graphite Furnace Atomic Absorption Spectrophotometry, Atomic Absorption Newsletter, 13:107-108.
74GUI	01	V. P. Guinn and R. Kishore (1974) Results from Multi-trace-element Neutron Activation Analyses of Marine Biological Specimens, Journal of Radioanalytical Chemistry, 19: 367-371.
74HEM	01	D. D. Hemphill, editor (1974) Proceedings of the Eighth Annual Conference on Trace Substances in Environmental Health, University of Missouri, Columbia, Missouri.
74HEN	01	T. E. Henzler, R. J. Korda, P. A. Helmke, M. R. Anderson, M. M. Jimenez, and L. A. Haskin (1974), An Accurate Procedure for Multielement Neutron Activation Analysis of Trace Elements in Biological Materials, Journal of Radioanalytical Chemistry, 20: 649-663.

CODE	N	REFERENCE
74HEY	01	K. Heydorn (1974) Detection of Systematic Errors by the Analysis of Precision, In 74LAF 01, pp. 127-134.
74HIC	01	J. E. Hicks, J. E. Fleenor, and H. Smith (1974) The Rapid Determination of Sulfur in Coal, Analytica Chimica Acta, 68: 480-483.
74HOF	01	G. L. Hoffman, P. R. Walsh, and M. P. Doyle (1974) Determination of a Geometry and Dead Time Correction Factor for Neutron Activation Analysis, Analytical Chemistry, 46: 492-496.
74IHN	01	M. Ihnat and R. J. Westerby (1974) Application of Flameless Atomization to the Atomic Absorption Determination of Selenium in Biological Samples, Analytical Letters, 7: 257-265.
74IHN	02	M. Ihnat (1974) Collaborative Study of a Fluorimetric Method for Determining Selenium in Foods, Journal of the Association of Official Analytical Chemists, 57: 373-378.
74LAF	01	P. D. LaFleur, editor (1974) Accuracy in Trace Analysis: Sampling, Sample Handling, and Analysis, Proceedings of the Seventh IMR Symposium, National Bureau of Standards Special Publication 422.
74LEI	01	O. W. Leisure and O. E. Olson (1974) Use of the AOAC Fluorometric Method for Selenium in Plants for the Analysis of Papers and Tobaccos, Journal of the Association of Official Analytical Chemists, 57: 658-661.
74LI	01	R. T. Li and D. M. Hercules (1974) Determination of Chromium in Biological Samples using Chemiluminescence, Analytical Chemistry, 46: 916-919.
74LIN	01	R. van der Linden, F. de Corte, and J. Hoste (1974) Activation Analysis of Biological Material with Ruthenium as a Multi-isotopic Comparator, Analytica Chimica Acta, 71: 263-275.
74LOO	01	J. C. van Loon and E. J. Brooker (1974) A Simplified Method for Determining Arsenic and Antimony by the Hydride Evolution-Atomic Absorption Method, Analytical Letters, 7: 505-513.
74LUT	01	G. J. Lutz (1974) The Analysis of Biological and Environmental Samples for Lead by Photon Activation, Journal of Radioanalytical Chemistry, 19: 239-244.
74MAI	01	E. J. Maienthal (1974) The Application of Linear Sweep Voltammetry to the Determination of Trace Elements in Biological and Environmental Materials, In 74HEM 01, pp. 243-246.
74MAS	01	R. Masironi (1974) Trace Elements in Relation to Cardiovascular Diseases, World Health Organization Status Report, WHO Offset Publication Number 5.
74MCC	01	L. T. McClendon (1974) Selective Determination of Chromium in Biological and Environmental Matrices, in 74HEM 01, pp. 255-257.
74MOO	01	L. J. Moore, L. Machian, W. Shields, and E. Garner (1974) Internal Normalization Techniques for High Accuracy Isotope Dilution Analyses - Application to Molybdenum and Nickel in Standard Reference Materials, Analytical Chemistry, 46: 1082
74NAD	02	R. A. Nadkarni (1974) Re-evaluation of Arsenic Concentration in the Biological Standards, Radiochemical and Radioanalytical Letters, 19: 127-134.
74OND	01	J. M. Ondov, W. Zoller, I. Olmez, N. Aras, G. Gordon, L. Rancitelli, K. Abel, R. Filby, K. Shah, and R. Ragaini (1974), Four-Laboratory Comparative Instrumental Nuclear Analysis of the NBS Coal and Fly Ash Standard Reference Materials, in 74LAF 01, pp. 211-218.
74ORV	01	E. Orvini, T. E. Gills, and P. D. LaFleur (1974) Method for Determination of Selenium, Arsenic, Zinc, Cadmium, and Mercury in Environmental Matrices by Neutron Activation Analysis, Analytical Chemistry, 46: 1294-1297.
74RAI	01	T. C. Rains and O. Menis (1974) An Intercomparison of Flame and Nonflame Systems in Atomic Absorption Spectrometry, in 74LAF 01, pp. 1045-1051.
74RAI	02	T. C. Rains, M. S. Epstein, and O. Menis (1974) Automatic Correction System for Light Scatter in Atomic Fluorescence Spectrometry, Analytical Chemistry, 46: 207.
74RAN	02	L. A. Rancitelli, J. Cooper, and R. Perkins (1974) Multielement Characterization of Atmospheric Aerosols by Neutron Activation and Direct Gamma-ray Analysis, and X-ray Fluorescence Analysis, in Comparative Studies of Food and Environmental Contamination, Proceedings Series, International Atomic Energy Agency, Vienna, pp. 440-444.
74RAV	01	V. Ravnik, M. Dermelj, and L. Kosta (1974) A Highly Selective Diethyldithiocarbamate Extraction System in Activation Analysis of Copper, Indium, Manganese, and Zinc: Application to the Analysis of Standard Reference Materials, Journal of Radioanalytical Chemistry, 20: 443.
74REU	01	F. W. Reuter and W. L. Reynolds (1974) Title Unknown, in Protein-Metal Interactions, M. Freidman editor, Plenum Press, New York, p. 621; taken from 78DAH 01.
74RIC	01	E. Ricci, T. Handley, and F. Dyer (1974) Analysis of Traces at ORNL's New High-flux Neutron Activation Laboratory, Journal of Radioanalytical Chemistry, 19: 141-148.
74ROO	01	H. L. Rook, P. D. LaFleur and J. E. Suddueth (1974) Trace Element Determination using a High Yield Electromagnetic Isotope Separator and Neutron Activation: The Determination of Cadmium, Nuclear Instruments and Methods, 116: 579-586.
74ROS	02	K. J. R. Rosman and J. R. de Laeter (1974) Mass Spectrometric Isotope Dilution Analyses of Cadmium in Standard Rocks, Chemical Geology, 13: 69-74.
74RUN	01	L. M. Rundle (1974) A Combustion Method for the Determination of Total Sulphur in Limestones, Analyst, 99: 163-165.
74SCH	03	R. Schelenz and J.-F. Diehl (1974) A Study into the Accuracy of a Remote-controlled System for Multielement Determination in Foodstuffs using NAA, in 74LAF 01, pp. 1173-1180.
74SHA	01	L. Shapiro (1974) Spectrophotometric Determination of Silica at High Concentrations using Fluoride as a Depolymerizer, Journal of Research of the U. S. Geological Survey, 2: 357.

CODE	N	REFERENCE
74SIE	02	D. Siemer and R. Woodriff (1974) Application of the Carbon Rod Atomizer to the Determination of Mercury in the Gaseous Products of Oxygen Combustion of Solid Samples, Analytical Chemistry, 46: 597-598.
74SLE	01	G. Slegers and A. Claeys (1974) Spectrophotometric Determination of Magnesium in Tobacco Leaves with Eriochrome Black B, Analyst, 99: 471-475.
74SWI	01	D. L. Swindle, L. R. Novak, and E. A. Schweikert (1974) Determination of Iron in Glass and Cobalt via Charged Particle Activation Analysis, Analytical Chemistry, 46: 655-658.
74TAL	01	Y. Talmi (1974) Determination of Zinc and Cadmium in Environmentally Based Samples by the Radiofrequency Spectrometric Source, Analytical Chemistry, 46: 1005-1010.
74TAL	02	Y. Talmi and A. W. Andren (1974) Determination of Selenium in Environmental Samples Using Gas Chromatography with a Microwave Emission Spectrometric Detection System, Analytical Chemistry, 46: 2122-2126.
74TAM	01	N. Tamura (1974) Accuracy in the Nondestructive Neutron Activation Analysis of Coal and Beryllium for Minor and Trace Elements using Cobalt as a Flux Determinant, Radiochemical and Radioanalytical Letters, 18: 135-142.
74THO	01	J. Thomas and H. J. Gluskoter (1974) Determination of Fluoride in Coal with the Fluoride Ion-selective Electrode, Analytical Chemistry, 46: 1321.
74ULL	01	P. A. Ullucci and J. Y. Hwang (1974) Determination of Cadmium in Biological Materials by Atomic Absorption, Talanta, 21: 745-750.
74WAH	01	J. S. Wahlberg (1974) Unpublished data; quoted in 74CRE 01.
74WEA	01	J. N. Weaver (1974) Rapid, Instrumental Neutron Activation Analysis for the Determination of Uranium in Environmental Matrices, Analytical Chemistry, 46: 1292-1294.
74WES	01	H. Wesch and A. Bindl (1974) Analysis of 11 Elements in Biological Material: Comparison of Neutron Activation Analysis and Atomic Absorption Analysis, in 74LAF 01, pp. 231-235.
74WOL	01	W. R. Wolf and F. E. Greene (1974) Preparation of Biological Materials for Chromium Analysis, in 74LAF 01, pp. 605-610.
75ABU	01	A. Abu-sama J. S. Morris, and S. R. Koirtyohann (1975) Wet Ashing of some Biological Samples in a Microwave Oven, Analytical Chemistry, 47: 1475-1477.
75AND	01	R. W. Andrews and D. C. Johnson (1975) Voltammetric Deposition and Stripping of Selenium(IV) at a Rotating Gold-disk Electrode in 0.1 M Perchloric Acid, Analytical Chemistry, 47: 294-299.
75BAB	01	S. P. Babu, editor (1975) Trace Elements in Fuel, Advances in Chemistry Series 141, American Chemical Society, Washington, D.C.
75BEH	01	D. Behne, P. Bratter, and W. Wolters (1975) Bestimmung von Blei in Biologischen Materialien mit Hilfe der flammenlosen Atomabsorptionsspektrometrie, Fresenius Zeitschrift fur Analytische Chemie, 277: 355-358.
75BLO	01	E. R. Blood and G. C. Grant (1975) Determination of Cadmium in Fish Tissue by Flameless Atomic Absorption with a Tantalum Ribbon, Analytical Chemistry, 47: 1438-1441.
75BLO	02	C. Block (1975) Determination of Lead in Coal and Coal Ashes by Flameless Atomic Absorption Spectrometry, Analytica Chimica Acta, 80: 369-373.
75BOL	01	B. A. Bolton and P. K. Hopke (1975) The Use of Instrumental Neutron Activation Analysis for the Determination of Arsenic Concentrations in Poultry, Journal of Radioanalytical Chemistry, 25: 299-302.
75BOL	02	H. J. Bollingberg (1975) Geochemical Prospecting using Seaweed, Shellfish and Fish, Geochimica et Cosmochimica Acta, 39: 1567-1570.
75CAM	01	J. L. Campbell, B. H. Orr, A. W. Herman, L. A. McNelles, J. A. Thompson, and W. B. Cook (1975), Trace Element Analysis of Fluids by Proton-induced X-ray Fluorescence Spectrometry, Analytical Chemistry, 47: 1542-1553.
75CAM	02	W. C. Campbell and J. M. Ottaway (1975) Determination of Lead in Carbonate Rocks by Carbon-furnace Atomic Absorption Spectrometry after Dissolution in Nitric Acid, Talanta, 22: 729-732.
75CAR	02	E. E. Cary and O. E. Olson (1975) Atomic Absorption Spectrophotometric Determination of Chromium in Plants, Journal of the Association of Official Analytical Chemists, 58: 433-435.
75EPS	01	M. S. Epstein, T. C. Rains, and O. Menis (1975) Determination of Cadmium and Zinc in Standard Reference Materials by Atomic Fluorescence Spectrometry with Automatic Scatter Correction, Canadian Journal of Spectroscopy, 20: 22-26.
75FRO	01	J. Frost, P. Santoliquido, L. Camp, and R. Ruch (1975) Trace Elements in Coal by Neutron Activation Analysis with Radiochemical Separations, in 75BAB 01.
75GLA	01	E. S. Gladney and H. L. Rook (1975) Simultaneous Determination of Tellurium and Uranium by Neutron Activation Analysis, Analytical Chemistry, 47: 1554.
75GUI	01	V. P. Guinn, M. A. Purcell, and W. W. Wadman (1975) International Symposium on Development of Nuclear Based Techniques for Measurement, Detection, and Control of Environmental Pollutants, Vienna, IAEA-SM-206, Paper 30.
75HAG	01	L. Hageman, L. Torma, and B. Ginther (1975) Analysis of Feed Grains and Forages for Traces of Cobalt by Flameless Atomic Absorption Spectroscopy, Journal of the Association of Official Analytical Chemists, 58: 990-994.
75HAL	01	C. Halvorsen and E. Steinnes (1975) Simple and Precise Determination of Zn and Cd in Human Liver by Neutron Activation Analysis, Fresenius Zeitschrift fur Analytische Chemie, 274: 199-202.
75HEI	01	H. Heinrichs (1975) Determination of Mercury in Water, Rocks, Coal, and Petroleum with Flameless Atomic Absorption Spectrophotometry Fresenius Zeitschrift fur Analytische Chemie, 273: 197-201.
75HIN	01	T. A. Hinners (1975) Atomic Absorption Analysis of Liver without Ashing, Fresenius Zeitschrift fur Analytische Chemie, 277: 377-378.

CODE	N	REFERENCE
75ISA	01	R. A. Isaac and W. C. Johnson (1975) Collaborative Study of Wet and Dry Ashing Techniques for the Elemental Analysis of Plant Tissue by Atomic Absorption Spectrophotometry, Journal of the Association of Official Analytical Chemists, 58: 436-440.
75JON	01	J. B. Jones (1975) Collaborative Study of the Elemental Analysis of Plant Tissue by Direct Reading Emission Spectroscopy, Journal of the Association of Official Analytical Chemists, 58: 764.
75JON	01	Ibid., Laboratory 1.
75JON	02	Ibid., Laboratory 2.
75JON	03	Ibid., Laboratory 3.
75JON	04	Ibid., Laboratory 4.
75JON	05	Ibid., Laboratory 5.
75JON	06	Ibid., Laboratory 6.
75JON	07	Ibid., Laboratory 7.
75JON	08	Ibid., Laboratory 8.
75JON	09	Ibid., Laboratory 9.
75JON	11	Ibid., Laboratory 11.
75JON	10	Ibid., Laboratory 10.
75KLE	01	D. H. Klein, A. Andren, J. Carter, J. Emery, C. Feldman, W. Fulekerson, W. Lyon, J. Ogle, Y. Talmi, R. van Hook, and N. Bolton (1975), Pathways of 37 Trace Elements through a Coal Fired Power Plant, Environmental Science and Technology 9: 973-978.
75KOI	01	H. Koizuma and K. Yasuda (1975) New Zeeman Method for Atomic Absorption Spectrophotometry, Analytical Chemistry, 47: 1679-1682.
75LIE	01	P. Lievens, R. Cornelis, and J. Hoste (1975) A Separation Scheme for the Determination of Trace Elements in Biological Materials by Neutron Activation Analysis, Analytica Chimica Acta, 80: 97-108.
75LIT	01	R. Litman, H. L. Finston, and E. T. Williams (1975) Evaluation of Sample Pretreatments for Mercury Determination Analytical Chemistry, 47: 2364-2369.
75MAN	01	D. C. Manning (1975) Aspirating Small Volume Samples in Flame Atomic Absorption Spectroscopy, Atomic Absorption Newsletter, 14: 99-102.
75MAZ	01	B. Maziere, J. Gros, and D. Comar (1975) Possibilities et Limites de l'Analyse d'Echantillons Biologiques par Activation Neutronique derriere Ecran de Cadmium, Journal of Radioanalytical Chemistry, 24: 279-293.
75MCG	01	J. R. McGinley and E. A. Schweikert (1975) Determination of Lithium, Boron, and Carbon by Quasi-prompt Charged Particle Activation Analysis, Analytical Chemistry, 47: 2403-2407.
75MIL	01	H. T. Millard and V. W. Swanson (1975) Neutron Activation Analysis of Coals using Instrumental Techniques, Transactions of the American Nuclear Society, 21: 108-109.
75MUR	01	J. Murphy (1975) Determination of Mercury in Coals by Peroxide Digestion and Cold Vapor Atomic Absorption Spectrophotometry, Atomic Absorption Newsletter, 14: 151-152.
75NAD	02	R. A. Nadkarni (1975) Multielement Analysis of Coal and Coal Fly Ash Standards by Instrumental Neutron Activation Analysis, Radiochemical and Radioanalytical Letters, 21: 161-176.
75OLS	01	O. E. Olson, I. S. Palmer, and E. E. Cary (1975) Modification of the Official Fluorometric Method for Selenium in Plants, Journal of the Association of Official Analytical Chemists, 58: 117-121.
75OND	01	J. M. Ondov, W. Zoller, I. Olmez, N. Aras, G. Gordon, L. Rancitelli, K. Abel, R. Filby, K. Shah, and R. Ragaini (1975), Elemental Concentrations in the National Bureau of Standards Environmental Coal and Fly Ash Standard Reference Materials, Analytical Chemistry, 47: 1102-1109.
75OWE	01	J. W. Owens and E. S. Gladney (1975) Determination of Beryllium in Environmental Materials by Flameless Atomic Absorption Spectroscopy, Atomic Absorption Newsletter, 14: 76-77.
75PEC	01	E. S. Peck (1975) Spectrographic Determination of Mercury in Rocks and Coal, Analytica Chimica Acta, 80: 75-83.
75PIC	01	C. J. Pickford and G. Rossi (1975) Determination of Some Trace Elements in NBS (SRM-1577) Bovine Liver using Flameless Atomic Absorption and Solid Sampling, Atomic Absorption Newsletter, 14: 78-80.
75PIE	01	R. Pietra, E. Sabbioni, and F. Girardi (1975) Determination of Ca, Mg, Ni, and Si in Biological Materials by Neutron Activation and Cerenkov Counting, Radiochemical and Radioanalytical Letters, 22: 243-250.
75POL	01	E. N. Pollock (1975) Trace Impurities in Coal by Wet Chemical Methods, in 75BAB 01.
75PUF	01	J. H. Puffer and R. S. Cohen (1975) Field Determination of Sodium and Potassium in Feldspars by Ion-selective Electrodes, Chemical Geology, 15: 217-222.
75REU	01	F. W. Reuter (1975) Numerical Matrix Correction Technique for the Measurement of Trace Elements in Plant Materials by X-ray Fluorescence Spectrometry, Analytical Chemistry, 47: 1763-1766.
75RIC	01	E. Ricci (1975) Methodology for High-flux Absolute Multielement Neutron Activation Analysis: Environmental Baselines by Analysis of Tree Rings, Analytica Chimica Acta, 79: 109-124.
75RUC	01	R. R. Ruch, R. Cahill, and J. Frost (1975) Trace Elements in Coals of the United States Determined by Activation Analysis and Other Techniques, Transactions of the American Nuclear Society, 21: 107-108.
75SIE	01	D. D. Siemer and L. Hagemann (1975) An Improved Hydride Generation-Atomic Absorption Apparatus for Selenium Determination, Analytical Letters, 8: 323-337.
75SLA	01	S. Slavin, G. E. Peterson, and P. C. Lindahl (1975) Determination of Heavy Metals in Meats by Atomic Absorption Spectroscopy, Atomic Absorption Newsletter, 14: 57-59.

CODE N	REFERENCE
75SME 01	J. Smeyers-Vebede, G. Segebarth, and D. L. Massart (1975) The Determination of Cu and Mn in Small Biological Samples with Graphite Furnace Atomic Absorption Spectrometry, Atomic Absorption Newsletter, 14: 153-154.
75STE 02	E. Steinnes (1975) A Two-group Separation Scheme for the Determination of 11 Trace Elements in Biological Material by Neutron Activation Analysis, Analytica Chimica Acta, 78: 307-315.
75TAL 01	Y. Talmi and V. E. Norvell (1975) Determination of Arsenic and Antimony in Environmental Samples using Gas Chromatography with a Microwave Emission Spectrometric System, Analytical Chemistry, 47: 1510-1516.
75THO 01	C. P. Thomas (1975) An Integrated Intensity Method for Emission Spectrographic Computer Analysis, Journal of Research of the United States Geological Survey, 3: 181-185.
75WEL 02	R. M. Welch and E. E. Cary (1975) Title unknown, in Journal of Agricultural and Food Chemistry, 23: 479; taken from 78BYR 01.
75WIM 01	J. W. Wimberley (1975) The Determination of Total Mercury at the Part-Per-Billion Level in Soils, Ores, and Organic Materials, Analytica Chimica Acta, 76: 337-343.
75WOR 01	G. J. Worrell, T. J. Vickers, and F. D. Williams (1975) A Solvent Extraction-Atomic Fluorescence System for the Determination of Cadmium in Complex Samples, Analytica Chimica Acta, 75: 453-456.
76AGG 01	J. Aggett and A. C. Aspell (1976) The Determination of Arsenic(III) and Total Arsenic by Atomic Absorption Spectroscopy, Analyst, 101: 341-347.
76AND 01	R. W. Andrews and D. C. Johnson (1976) Determination of Selenium(IV) by Anodic Stripping Voltammetry in Flow System with Ion Exchange Separation, Analytical Chemistry, 48: 1056-1060.
76BAT 01	L. C. Bate, S. E. Lindberg, and A. W. Andren (1976) Elemental Analysis of Water and Air Solids by Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 32: 125-135.
76BLO 01	C. Block, R. Dams, and J. Hoste (1976) Chemical Composition of Coal and Fly Ash, in 76IAE 01, pp. 101-110.
76CAV 01	P. Cavalli and G. Rossi (1976) Determination of Submicrogram Amounts of Mercury in Various Matrices by Flameless Atomic Fluorescence Spectrometry, Analyst, 101: 272-277.
76CHA 01	A. Chattopadhyay (1976) Multielement Instrumental Photon Activation Analysis of Digested Sewage Sludges, in 76IAE 01, pp. 383-403.
76CHA 02	C. C. Y. Chan (1976) Improvement in the Fluorometric Determination of Selenium in Plant Materials with 2,3-Diaminonaphthalene, Analytica Chimica Acta, 82: 213-315.
76DER 01	M. Dermelj, V. Ravnik, and L. Kosta (1976) A Fast Isolation and Determination of Cd in Some Fungi, Other Biological Materials, Soil, and Zn Metal by NAA, Radiochemical and Radioanalytical Letters, 24: 91-102.
76DIK 01	M. Diksic and M. O. McCrady (1976) Fast Determination of Selenium in Biological Materials by Instrumental Neutron Activation Analysis, Radiochemical and Radioanalytical Letters, 26: 89-94.
76DOG 01	S. Dogan and W. Haerdi (1976) Some Applications of Rapid Separation of Mercury on Metallic Copper to Environmental Samples with Determination by Flameless Atomic Absorption Spectrometry, Analytica Chimica Acta, 84: 89-96.
76EPS 01	M. S. Epstein, T. C. Rains, and T. C. O'Haver (1976) Wavelength Modulation for Background Correction in Graphite Furnace Atomic Emission Spectrometry, Applied Spectroscopy, 30: 324-329.
76EPS 02	M. S. Epstein (1976) Private Communication, National Bureau of Standards; taken from 76ZAN 01.
76FIO 01	J. A. Fiorino, J. W. Jones, and S. G. Capar (1976) Sequential Determination of Arsenic, Selenium, Antimony, and Tellurium in Foods via Rapid Hydride Evolution and Atomic Absorption Spectrometry, Analytical Chemistry, 48: 120-125.
76FUK 01	M. Fukami, S. Toda, and K. Fuwa (1976) Development of a New Type Low Temperature Asher for Small Amounts of Biological Sample, Bunseki Kagaku, 25: 282-284.
76GAL 01	M. Gallorini, M. diCasa, R. Stella, N. Genova, and E. Orvini (1976), Multielement Trace Analysis by Atomic Absorption Spectrometry and Neutron Activation Analysis in Biological Matrices, Journal of Radioanalytical Chemistry, 32: 17-23.
76GAN 01	R. Ganapathy, G. M. Papia, and L. Grossman (1976) The Abundances of Zirconium and Hafnium in the Solar System, Earth and Planetary Science Letters, 29: 302-308.
76GAU 01	A. Gaudry, B. Maziere, D. Comar, and D. Nau (1976) Multielement Analysis of Biological Samples after Intense Neutron Irradiation and Fast Chemical Separation, Journal of Radioanalytical Chemistry, 29: 77-87.
76GLA 01	E. S. Gladney, E. T. Jurney, and D. B. Curtis (1976) Nondestructive Determination of Boron and Cadmium in Environmental Materials by Thermal Neutron-Prompt Gamma-ray Spectrometry, Analytical Chemistry, 48: 2139-2142.
76GLA 02	E. S. Gladney and J. W. Owens (1976) Beryllium Emission from a Coal-fired Power Plant, Journal of Environmental Science and Health, A11: 297-311.
76GUI 01	V. P. Guinn, M. A. Purcell, and W. W. Wadman (1976) Measurement of Vanadium in Oceanographic/Environmental Samples by Neutron Activation Analysis with Pre-irradiation Separation, in 76IAE 01, pp. 407-412.
76GUZ 01	G. Guzzi, R. Pietra, and E. Sabbioni (1976) Determination of 25 Elements in Biological Standard Reference Materials by Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 34: 35-57.
76HAD 01	T. Hadeishi and R. D. McLaughlin (1976) Zeeman Atomic Absorption Determination of Lead with a Dual Chamber Furnace, Analytical Chemistry, 48: 1009-1011.
76HAN 01	R. G. V. Hancock (1976) Low Flux Multielement Instrumental Neutron Activation Analysis in Archaeometry, Analytical Chemistry, 48: 1443.

CODE	N	REFERENCE
76HOW	01	W. G. Howell, J. D. Ganjei, and G. H. Morrison (1976) Internal Standardization in Flame Analyses using a Vidicon Spectrometer, Analytical Chemistry, 48: 319-326.
76IAE	01	International Atomic Energy Agency (1976) Proceedings of an International Symposium on the Development of Nuclear-based Techniques for the Measurement, Detection, and Control of Environmental Pollutants, Vienna.
76IHN	01	M. Ihnat (1976) Atomic Absorption Spectrometric Determination of Selenium with Carbon Furnace Atomization, Analytica Chimica Acta, 82: 293-309.
76IHN	02	M. Ihnat (1976) Selenium in Foods: Evaluation of Atomic Absorption Spectrometric Techniques involving Hydrogen Selenide Generation and Carbon Furnace Atomization, Journal of the Association of Official Analytical Chemists, 59: 911-922.
76KAT	02	T. Kato, M. Masumoto, N. Sato, and N. Suzuki (1976) The Yields of Photonuclear Reactions for Multielement Photon Activation Analysis, Journal of Radioanalytical Chemistry, 32: 51-70.
76KAT	03	T. Kato, N. Sato, and N. Suzuki (1976) Nondestructive Multielement Photoactivation Analysis of Environmental Materials, Talanta, 23: 517-524.
76KAT	04	T. Kato, N. Sato, and N. Suzuki (1976) Multielement Photon Activation Analysis of Biological Materials, Analytica Chimica Acta, 81: 337-347.
76KOI	01	H. Koizumi and K. Yusuda (1976) Determination of Lead, Cadmium, and Zinc using the Zeeman Effect in Atomic Absorption Spectrometry, Analytical Chemistry, 48: 1178-1182.
76KRI	03	K. V. Krishnamurty, E. Shprit, and M. M. Reddy (1976) Trace Metal Extraction of Soils and Sediments by Nitric Acid-Hydrogen Peroxide, Atomic Absorption Newsletter, 15: 68-70.
76KUC	01	E. T. Kucera and R. R. Heinrich (1976) Multielement Trace Analysis of Coals, Ashes, and Related Materials from Coal-Treatment Facilities by Instrumental Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 32: 137-150.
76LAN	01	F. J. Langmyhr and J. Aamodt (1976) Atomic Absorption Spectrometric Determination of Some Trace Metals in Fish Meal and Bovine Liver by the Solid Sampling Technique, Analytica Chimica Acta, 87: 483-486.
76LEO	02	L. Leoni and M. Saitta (1976) X-ray Fluorescence Analysis of 29 Trace Elements in Rock and Mineral Standards, Rendiconti Soc. Italiana di Mineralogia e Petrologia, 32: 497-510.
76MCC	03	M. T. McCulloch, J. R. de Laeter, and K. J. R. Rosman (1976) The Isotopic Composition and Elemental Abundance of Lutetium in Meteorites and Terrestrial Samples and the Lu-176 Cosmochronometer, Earth and Planetary Science Letters, 28: 308-322.
76MEL	01	S. Meloni, V. Caramella-Crespi, M. T. Ganzerli-Valentini, and P. Borroni (1976), Accurate Determination of Arsenic and Mercury in Reference Materials by Destructive Neutron Activation Analysis, Radiochemical and Radioanalytical Letters, 25: 117-128.
76MEL	03	S. Meloni, V. Caramella-Crespi, and G. Fassi (1976) Determination of Some Bioelements in Rice Grains by Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 34: 113-119.
76MIL	02	D. A. Miller and V. P. Guinn (1976) Precision High-speed Neutron Activation Analysis via Very Short-Lived Activities, Journal of Radioanalytical Chemistry 32: 179-188.
76OND	01	J. M. Ondov, R. Ragaini, R. Heft, G. Fisher, D. Silberman, and B. Prentice (1976), Interlaboratory Comparison of Neutron Activation and Atomic Absorption Analysis of Size Classified Stack Fly Ash, in Methods and Standards for Environmental Measurement, Proceedings of the Eighth IMR Symposium, Gaithersburg, Maryland, National Bureau of Standards Special Publication 464, pp. 565-569.
76OWE	01	J. W. Owens and E. S. Gladney (1976) Lithium Metaborate Fusion and the Determination of Trace Metals in Fly Ash by Flameless Atomic Absorption, Atomic Absorption Newsletter, 15: 95-97.
76PIE	01	J. O. Pierce, F. Lichte, C. Vogt, A. Abu-Sarma, T. Ryan, S. Koirtyohann, and J. Vogt (1976), Comparison of Chromium Determinations in Environmental and Biological Samples by Neutron Activation Analysis, Atomic Absorption, and Gas Chromatography, in 76IAE 01, pp. 357-368.
76RAG	01	R. C. Ragaini, R. E. Heft, and D. Garvis (1976) Neutron Activation Analysis at the Livermore Pool-Type Reactor for the Environmental Research Program, Lawrence Livermore Laboratory report UCRL-52092.
76SIE	01	D. D. Siemer, P. Koteel, and V. Jariwala (1976) Optimization of Arsine Generation in Atomic Absorption Arsenic Determinations, Analytical Chemistry, 48: 836-840.
76STE	01	R. Stella, N. Genova, M. di Casa, M. Gallorini, and E. Orvini (1976), Comparative Investigation of Different Radiochemical Methods for Chromium Determination in Biological and Environmental Matrices, Journal of Radioanalytical Chemistry 34: 59-63.
76STE	05	E. Steinnes (1976) Instrumental Activation Analysis of Coal and Fly Ash with Thermal and Epithermal Neutrons and Short-Lived Nuclides, Analytica Chimica Acta, 87: 451-462.
76URE	01	A. M. Ure and M. C. Mitchell (1976) The Determination of Cadmium in Plant Material and Soil Extracts by Solvent Extraction and Atomic Absorption with a Carbon-rod Atomizer, Analytica Chimica Acta, 87: 283-290.
76VIJ	01	P. N. Vijan and G. R. Wood (1976) Semi-automated Determination of Lead by Hydride Generation and Atomic Absorption Spectrophotometry, Analyst, 101: 966.
76VIJ	02	P. N. Vijan, A. C. Rayner, D. Sturgis, and G. R. Wood (1976) A Semi-automated Method for the Determination of Arsenic in Soil and Vegetation by Gas-phase Sampling and Atomic Absorption Spectrophotometry, Analytica Chimica Acta, 82:329
76WAU	01	R. D. Wauchope (1976) Atomic Absorption Determination of Trace Quantities of Arsenic: Application of a Rapid Arsine Generation Technique to Soil, Water, and Plant Samples, Atomic Absorption Newsletter, 15: 64-67.

CODE N REFERENCE

76WEW 01 E. W. Wewerka (1976)
Trace Element Characterization and Removal/Recovery from Coal and Coal Wastes, Los Alamos Scientific Laboratory report LA-6498-PR.

76WHI 01 D. Whitehead and S. A. Malik (1976)
Automated Colorimetric Determination of Phosphorus in Silicate Rocks in the Presence of Silicon, Analyst, 101: 485-490.

76WIL 01 D. R. Williams and J. S. Hislop (1976)
Determination of Copper and Zinc in Bone Ash using Accelerator Produced Gamma Photons, Proceedings of the Analytical Division of the Chemical Society (London), 13:202.

76WOL 01 W. R. Wolf (1976)
Coupled Gas Chromatography - Atomic Absorption Spectrometry for the Nanogram Determination of Chromium, Analytical Chemistry, 48: 1717-1720.

76ZAN 01 A. T. Zander, T. C. O'Haver, and P. N. Keliher (1976)
Continuum Source Atomic Absorption Spectrometry with High Resolution and Wavelength Modulation, Analytical Chemistry, 48: 1166-1175.

76ZAN 02 A. T. Zander and T. C. O'Haver (1976)
Improved Accuracy in Background Corrected Atomic Absorption Spectrometry, in Methods and Standards for Environmental Measurement, Proceedings of the Eight IMR Symposium, Gaithersburg, Maryland, National Bureau of Standards Special Publication 464, pp. 53-59.

76ZEI 01 R. Zeisler, J. B. Cross, and E. A. Schweikert (1976)
Trace Elemental Analysis by Heavy Ion Induced X-ray Emission Analytical Chemistry, 48: 2124-2129.

77AND 01 W. L. Anderson and K. E. Smith (1977)
Dynamics of Mercury at Coal-Fired Power Plant and Adjacent Cooling Lake, Environmental Science and Technology, 11: 75.

77ARU 01 P. Aruscavage (1977)
Determination of Arsenic, Antimony, and Selenium in Coal by Atomic Absorption Spectrometry with a Graphite Tube Atomizer Journal of Research of the U. S. Geological Survey, 5: 405.

77BAJ 02 S. Bajo and A. Wyttenbach (1977)
Liquid-Liquid Extraction of Cadmium with Diethyldithiocarbamic Acid, Analytical Chemistry, 49: 158-161.

77BAN 03 S. Bando and T. Imahashi (1977)
Determination of Arsenic, Mercury, and Selenium in Biological Standard Reference Materials by Neutron Activation Analysis, Bunseki Kagaku, 26: 138-140.

77BRU 01 H. J. Brumsack (1977)
Potential Metal Pollution in Grass and Soil Samples around Brickworks, Environmental Geology, 2: 33-41.

77BUO 01 J. A. Buono, J. C. Buono, and J. L. Fasching (1977)
Simultaneous Determination of Al, V, Mn, and Cu from Neutron-Activated Saline Matrices by Precipitation with Poly-5-vinyl-8-hydroxyquinoline, Journal of Radioanalytical Chemistry, 36: 353-358.

77BUR 01 W. R. Burke and B. I. Diamondstone (1977)
Procedures for the Determination of Arsenic, Copper, and Nickel by Molecular Absorption Spectrometry, in 77MAV 01, pp. 73-84.

CODE N REFERENCE

77BYR 01 A. R. Byrne (1977)
Activation Analysis of Tin at Nanogram Levels by Liquid Scintillation Counting of Sn-121, Journal of Radioanalytical Chemistry, 37: 591-597.

77CAH 01 R. A. Cahill (1977)
Title Unknown, taken from 77GLU 01.

77CAM 01 J. L. Campbell (1977)
Specimen Preparation in PIXE Analysis, Nuclear Instruments and Methods, 142: 263-273.

77CHA 01 A. Chattopadhyay (1977)
Optimal use of Instrumental Neutron and Photon Activation Analysis for Multielement Determinations in Sewage Sludges, Journal of Radioanalytical Chemistry, 37: 785-799.

77CRO 01 J. B. Cross, R. Zeisler, and E. A. Schweikert (1977)
High Energy Heavy-Ion Induced X-ray Emission Analysis, Nuclear Instruments and Methods, 142: 111-119.

77DER 01 M. Dermelj, V. Ravnik, and L. Kosta (1977)
Simultaneous Determination of Trace Elements Cd, Cu, and Zn in Different Environmental Samples by Neutron Activation Analysis, Radiochemical and Radioanalytical Letters, 28: 231

77DIK 01 M. Diksic and T. F. Cole (1977)
Fast Determination of Molybdenum and Tellurium by Neutron Activation Analysis, Analytica Chimica Acta, 93: 261-266.

77DON 01 D. L. Donohue, J. A. Carter, and J. C. Franklin (1977)
Separated Isotopes as Internal Standards in Spark Source Mass Spectrometry, Analytical Letters, 10: 371-379.

77EGA 01 A. Egan, S. A. Kerr, and M. J. Minski (1977)
Determination of Selenium in Biological Materials using Se-77m and Cyclic Activation Analysis, Radiochemical and Radioanalytical Letters, 28: 369-378.

77FEL 01 C. Feldman (1977)
Determination of Traces of Arsenic in Siliceous Materials, Analytical Chemistry, 49: 825-828.

77FIL 01 R. H. Filby, K. R. Shah, and C. A. Sautter (1977)
A Study of Trace Element Distribution in the Solvent Refined Coal Process using Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 37: 693-704.

77FLA 01 F. J. Flanagan, L. Schwartz, J. Rowe, and A. Dorrzapf (1977)
Available Clay and Feldspar Reference Samples as Standards for Archaeological Pottery Studies, Geostandards Newsletter, 1: 61-66.

77FLO 01 T. Florkowski, T. Kuc, and S. Piorek (1977)
Determination of Trace Elements in Plants by the X-ray Fluorescence Analysis of Environmental Pollution Investigations, International Journal of Applied Radiation and Isotopes, 28: 679-686.

77FRI 01 M. T. Friend, C. A. Smith, and D. Wishart (1977)
Ashing and Wet Oxidation Procedures for the Determination of Some Volatile Trace Metals in Foodstuffs and Biological Materials by AAS, Atomic Absorption Newsletter, 16: 46-49.

77FRY 01 R. C. Fry and M. B. Denton (1977)
High Solids Sample Introduction for Flame Atomic Absorption Analysis, Analytical Chemistry, 49: 1413-1417.

77FUJ 01 K. Fujiwara, Y. Umezawa, U. Numata, and K. Fuwa (1977)
Carbon Rod Atomic Absorption for Intact Cell Systems and Biological Tissues, Bunseki Kagaku, 26: 735-737.

CODE	N	REFERENCE
77GAN	03	S. Gangadharan, M. S. Das, and S. Yegnasubramanian (1977) Measurement of Annihilation Radiation in Activation Analysis Enhancement of Specificity through Triple Coincidence, Journal of Radioanalytical Chemistry, 37: 181-187.
77GIA	01	R. D. Giauque, R. B. Garrett, and L. Y. Goda (1977) Determination of Forty Elements in Geochemical Samples and Coal Fly Ash by X-ray Fluorescence Spectrometry, Analytical Chemistry, 49: 1012-1017.
77GIA	02	R. D. Giauque (1977) Private Communication, Lawrence Berkeley Laboratory.
77GIL	01	T. E. Gills and L. T. McClendon (1977) Role of Neutron Activation Analysis in the Evaluation of Sampling, Storage, and Analysis of Samples for the National Environmental Banking System, Journal of Radioanalytical Chemistry, 39: 285-291.
77GIL	03	T. E. Gills, M. Gallorini, and R. R. Greenberg (1977) The Determination of Selected Toxic Elements in Biological Matrices using Radiochemical Activation Analysis, in 77VOG 01, pp. 597-609.
77GLA	01	E. S. Gladney (1977) Copper Determination in Standard Materials by Neutron Activation and Srafion NMRR Anion-Exchange Resin, Analytica Chimica Acta, 91: 353-356.
77GLA	02	E. S. Gladney (1977) Direct Determination of Beryllium in NBS SRM 1632 Coal by Flameless Atomic Absorption, Atomic Absorption Newsletter, 16: 42-43.
77GLA	03	E. S. Gladney and J. W. Owens (1977) Determination of Mercury by Carrier-Free Combustion Separation and Flameless Atomic Absorption Spectrometry, Analytica Chimica Acta, 90: 271-274.
77GLU	01	H. J. Gluskoter, R. Ruch, W. Miller, R. Cahill, G. Dreher, and J. Kuhn (1977), Trace Elements in Coal: Occurrence and Distribution, Illinois State Geological Survey circular 499.
77GOO	01	G. C. Goode, J. Herrington, and P. C. Goddard (1977) Neutron Activation Analysis for Aluminium in Bone and Tissue Samples, Radiochemical and Radioanalytical Letters, 31: 87-94.
77GUI	02	V. P. Guinn and D. A. Miller (1977) Recent Instrumental Neutron Activation Analysis Studies Utilizing Very Short-lived Activities, Journal of Radioanalytical Chemistry, 37: 313-324.
77GUI	03	V. P. Guinn, E. R. Christensen, and K. de Lancey (1977) Neutron Activation Analysis Trace Element Studies in Connection with the Offshore Drilling for Oil, in 77VOG 01, pp. 303-311.
77GUL	01	B. L. Gulson (1977) Isotopic and Geochemical Studies on Crustal Effects in the Genesis of the Woodlawn Pb-Zn-Cu Deposit, Contributions to Mineralogy and Petrology, 65: 227-242.
77GUZ	01	G. Guzzi, A. Colombo, F. Girardi, R. Pietra, G. Rossi, and N. Toussaint (1977), Comparison of Various Analytical Techniques for Homogeneity Test of Candidate Standard Reference Materials, Journal of Radioanalytical Chemistry, 39: 263-276.
77HAM	01	H. Hamaguchi, Y. Numata, S. Iwata, M. Koyama, K. Sasajima, Y. Katayama, T. Takeuchi, M. Shinogi, T. Mamuro, Y. Kusaka, H. Tsuji, T. Tamari, T. Sagawa, S. Ohmori, S. Nagatsuka, Y. Tanizaki, T. Susuki, K. Tomura, Y. Hashimoto, S. Bando, and T. Imahashi (1977), Precision of Neutron Activation Analysis for Environmental Biological Materials, Bunseki Kagaku, 26: T23-T28.
77HAM	04	L. G. Hambleton (1977) Semiautomated Method for Simultaneous Determination of Phosphorus, Calcium, and Crude Protein in Animal Feeds, Journal of the Association of Official Analytical Chemists, 60: 845-852.
77HAN	02	M. A. Haney (1977) Title Unknown, Journal of Forensic Science, 22: 534; taken from 80KAN 01.
77HEY	01	K. Heydorn, Z. Z. Skanborg, R. Gowzdz, J. O. Schmidt, and M. E. Wacks (1977), Determination of Lithium by Instrumental Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 37: 155-168.
77HOP	01	D. M. Hopkins (1977) An Improved Ion Selective Electrode Method for the Rapid Determination of Fluorine in Rocks and Soils, Journal of Research of the U.S. Geological Survey, 5: 589-593.
77IHN	01	M. Ihnat and H. J. Miller (1977) Acid Digestion, Hydride Evolution Atomic Absorption Spectrophotometric Method for Determining Arsenic and Selenium in Foods: Collaborative Study, Part I, Journal of the Association of Official Analytical Chemists, 60: 1414-1433.
77IHN	03	M. Ihnat and H. J. Miller (1977) Analysis of Foods for Arsenic and Selenium by Acid Digestion Hydride Evolution Atomic Absorption Spectrophotometry, Journal of the Association of Official Analytical Chemists, 60: 813-825.
77JER	01	R. E. Jervis, B. Tiefenbach, and A. Chattopadhyay (1977) Scalp Hair as a Monitor of Population Exposure to Environmental Pollutants, Journal of Radioanalytical Chemistry, 37: 751-760.
77JUR	01	E. T. Jurney, D. B. Curtis, and E. S. Gladney (1977) Determination of Sulfur in Environmental Materials by Thermal Neutron Capture Prompt Gamma-ray Spectrometry, Analytical Chemistry, 49: 1741-1743.
77JUR	02	H. Jurgensen and D. Behne (1977) Variations in Trace Element Concentrations in Human Blood Serum in the Normal State Investigated by Instrumental Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 37: 375-382.
77KON	01	N. K. Konanur and G. W. van Loon (1977) Determination of Lead and Antimony in Firearm Discharge Residues on Hands by Anodic Stripping Voltammetry, Talanta, 24: 184-187.
77KUS	01	Y. Kusaka, H. Tsuji, Y. Tamari, T. Sagawa, S. Ohmori, S. Imai, and T. Ozaki (1977), Neutron Activation Analysis of Biologically Essential Trace Elements in Environmental Specimens using Pyrrolidinedithiocarbamate Extraction, Journal of Radioanalytical Chemistry, 37: 917-926.

CODE	N	REFERENCE
77LAD	01	W. Ladrach and J. D. van der Laarse (1977) The Determination of Total Sulphur in Coal by a Semi-micro Tube Combustion Method, Analytica Chimica Acta, 94: 213-216.
77LAN	01	J. Lange and H.-J. Brumsack (1977) Total Sulphur Analysis in Geological and Biological Material by Coulometric Titration Following Combustion, Fresenius Zeitschrift fur Analytische Chemie, 286: 361-366.
77LAU	01	J. C. Laul and L. A. Rancitelli (1977) Multielement Analysis by Sequential Instrumental and Radiochemical Neutron Activation, Journal of Radioanalytical Chemistry, 38: 461-475.
77LAU	02	J. C. Laul, K. K. Nielson, and N. A. Wogman (1977) Trace Rare Earth Analysis by Neutron Activation and Gamma-ray/X-ray Spectrometry, in 77VOG 01, pp. 198-209.
77LIE	01	P. Lievens, J. Versieck, R. Cornelis, and J. Hoste (1977) The Distribution of Trace Elements in Normal Human Liver Determined by Semi-automated Radiochemical Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 37: 483-496.
77LOR	01	D. A. Lord, J. W. McLaren, and R. C. Wheeler (1977) Determination of Trace Metals in Fresh Water Mussels by Atomic Absorption Spectrometry with Direct Solid Sample Injection, Analytical Chemistry, 49: 257-261.
77MAE	01	W. Maenhaut and W. H. Zoller (1977) Determination of the Chemical Composition of the South Pole Aerosol by Instrumental Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 37: 637-650.
77MAI	01	E. J. Mainethal (1977) Analysis of Botanical Standard Reference Materials by Cathode Ray Polarography, in 77MAV 01, pp. 91-105.
77MAV	01	R. Mavrodineanu, editor (1977) Procedures used at the National Bureau of Standards to Determine Selected Trace Elements in Biological and Botanical Materials, NBS Special Publication 492.
77MEL	01	S. Meloni and M. T. Ganzerli-Valentini (1977) New Improved Chemical Procedures in the Neutron Activation Analysis of Environmental Samples, in 77VOG 01, pp. 161-169.
77MIN	01	M. J. Minski, C. A. Girling, and P. J. Peterson (1977) Determination of Gold and Arsenic in Plant Materials by Neutron Activation Analysis, Radiochemical and Radioanalytical Letters, 30: 179-186.
77MIT	01	J. W. Mitchell, L. D. Blitzer, T. Y. Kometani, T. Gills, and L. Clark (1977), Homogeneously Doped Silica Matrices for Trace Element Standards in Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 39: 335-342.
77MYR	01	D. R. Myron, S. H. Givand, and F. H. Nielsen (1977) Vanadium Content of Selected Foods as Determined by Flameless Atomic Absorption Spectroscopy, Journal of Agricultural and Food Chemistry, 25: 297-300.
77NAD	01	R. A. Nadkarni and G. H. Morrison (1977) Neutron Activation Determination of Noble Metals using a Selective Group Separation Scheme, Journal of Radioanalytical Chemistry, 38: 435-449.
77NAD	02	R. A. Nadkarni (1977) Multielement Analysis of Biological Standards by Neutron Activation Analysis, Radiochemical and Radioanalytical Letters, 30: 329-340.
77NIE	01	K. K. Nielson (1977) Matrix Corrections for Energy Dispersive X-ray Fluorescence Analysis of Environmental Samples with Coherent/Incoherent Scattered X-rays, Analytical Chemistry, 49: 641-648.
77OHL	01	O. A. Ohlweiler and J. O. Meditsch (1977) Determination of Silica in Silicates by Formation of 12-Molybdosilicic Acid and Redox Titration of Molybdenum(III), Talanta, 24: 652-654.
77OMI	01	J. Omi and Y. Hashimoto (1977) Post-Irradiation Chemistry of Selenium in Neutron Activation Analysis, Bunseki Kagaku, 26: 419-421.
77OSB	01	T. W. Osborn and W. B. Broering (1977) Neutron Activation Analysis in an Industrial Laboratory using an Off-site Nuclear Reactor, in 77VOG 01, pp. 185-197.
77PAC	01	Petrol. Assoc. Conserv. Can. Envir. (1977) Title Unknown, PACE report no. 77-5; taken from 78BER 02.
77PAU	01	P. J. Paulsen (1977) Spark Source Mass Spectrometric Isotope Dilution Determination of Cd, Cu, Fe, Pb, Hg, Mo, Ni, Se, Ag, Te, Ti, and Zn, in 77MAV 01, pp. 33-48.
77PIL	01	A. Pilate, P. Geladi, and F. Adams (1977) Determination of Aluminium in Aerosols by Flameless Atomic Absorption Spectrometry, Talanta, 24: 512-514.
77POO	01	C. F. Poole, N. J. Evans, and D. G. Wibberley (1977) Determination of Selenium in Biological Samples by Gas-liquid Chromatography with Electron Capture Detection, Journal of Chromatography, 136: 73-83.
77RAI	01	R. M. Raie and H. Smith (1977) The Determination of Selenium in Biological Material by Thermal Neutron Activation Analysis, Radiochemical and Radioanalytical Letters, 28: 215-220.
77RIN	01	H. A. van Rinsvelt, R. D. Lear, and W. R. Adams (1977) Human Diseases and Trace Elements: Investigations by Proton Induced X-ray Emission, Nuclear Instruments and Methods, 142: 171-180.
77ROO	01	H. L. Rook (1977) The Determination of Iodine in Biological and Environmental Standard Reference Materials, Journal of Radioanalytical Chemistry, 39: 351-358.
77ROO	02	H. L. Rook (1977) Rapid, Quantitative Separation for the Determination of Selenium using Neutron Activation Analysis, in 77MAV 01, pp. 26-32.
77ROW	03	J. J. Rowe and E. Steinnes (1977) Instrumental Activation Analysis of Coal and Fly Ash with Thermal and Epithermal Neutrons, Journal of Radioanalytical Chemistry, 37: 849-856.
77ROW	04	J. J. Rowe and E. Steinnes (1977) Determination of 30 Elements in Coal and Fly Ash by Thermal and Epithermal Neutron Activation Analysis, Talanta, 24: 433
77SEG	01	C. Segebade (1977) Simultane Bestimmung von N, Mg, Si, P, und K in Pflanzenmaterial durch 14 MeV-Neutronenaktivierungs analyse Fresenius Zeitschrift fur Analytische Chemie, 284: 23-29.

CODE N REFERENCE

77SHE 02 D. A. Shearer and R. O. Cloutier (1977)
Chelate Extraction and Flame Atomic Absorption Spectrometric Determination of Nanogram Amounts of Manganese in Blood and Animal Tissue, Journal of the Association of Official Analytical Chemists, 60: 155-159.

77SHU 01 G. T. C. Shum, H. C. Freeman, and J. F. Uthe (1977)
Flameless Atomic Absorption Spectrophotometry of Selenium in Fish and Food Products, Journal of the Association of Official Analytical Chemists, 60: 1010-1014.

77SIE 01 D. D. Siemer, R. K. Vitek, P. Koteel, and W. Houser (1977)
Determination of Arsenic in Beverages and Foods by Hydride Generation Atomic Absorption Spectrometry, Analytical Letters, 10: 357-369.

77SMI 01 R. G. Smith, J. van Loon, J. Knechtel, J. Fraser, A. Pitts, and A. Hodges (1977), A Simple and Rapid Hydride Generation Atomic Absorption Method for the Determination of Arsenic in Biological, Environmental, and Geological Samples, Analytica Chimica Acta, 93: 61-67.

77SMI 04 J. Smits and R. van Grieken (1977)
Optimization of a Simple Spotting Procedure for X-ray Fluorescence Analysis of Waters, Analytica Chimica Acta, 88: 97-107.

77SMI 05 F. Smith, A. McMurtrie, and H. Galbraith (1977)
Ion Chromatographic Determination of Sulfur and Chlorine using Milligram and Submilligram Sample Weights, Microchemical Journal, 22: 45-49.

77SMY 01 W. R. Smythe (1977)
Private Communication, University of Colorado; taken from 77RIN 01.

77STE 02 R. Stella, N. Genova, and M. di Casa (1977)
Halogen Determination in Vegetable NBS Standard Reference Materials: Fluorine by Isotope Dilution; Chlorine, Bromine and Iodine by Neutron Activation Analysis, Radiochemical and Radioanalytical Letters, 30: 65-74.

77TAG 01 M. Taguchi, K. Yasuda, Y. Dokiya, and M. Shimizu (1977)
Mercury Determination in Fish Samples by Flameless Atomic Absorption Spectrometry: Sampling and Wet Digestion, Bunseki Kagaku, 26: 438-441.

77TAM 01 K. H. Tam and H. B. S. Conacher (1977)
The Suitability of the Dry Ashing Procedure for Determination of Arsenic in Marine Samples, Journal of Environmental Science and Health, B12: 213-227.

77TIL 01 J. H. Tillman (1977)
A Combustimetric Method for Determining the Total Carbon Content of Geological Materials, Journal of Research of the U.S. Geological Survey, 5: 583-587.

77TJI 01 P. S. Tjioe, J. J. M. de Goeij, and J. P. W. Houtman (1977)
Extended Automated Separation Techniques in Destructive Neutron Activation Analysis: Application to Various Biological Materials, Including Human Tissues and Blood, Journal of Radioanalytical Chemistry, 37: 511-522.

77TRO 01 G. Troll, A. Farzaneh, and K. Cammann (1977)
Rapid Determination of Fluoride in Mineral and Rock Samples using an Ion Selective Electrode, Chemical Geology, 20: 295.

77TSU 01 K. Tsunoda, K. Fujiwara, and K. Fuwa (1977)
Subnanogram Fluorine Determination by Aluminum Monofluoride Molecular Absorption Spectrometry, Analytical Chemistry, 49: 2035-2039.

CODE N REFERENCE

77UCH 02 T. Uchida, I. Kojima, and C. Iida (1977)
"One-drop Method" in Flame Atomic Absorption Spectrometry, Bunseki Kagaku, 26: T44-T47.

77VAN 01 C. Vandecasteele, R. Kieffer, and J. Hoste (1977)
Activation Analysis with Cyclotron-Produced Fast Neutrons Application to Instrumental Multielement Analysis and to the Radiochemical Determination of Fluorine, Journal of Radioanalytical Chemistry, 37: 255-265.

77VOB 01 M. Vobeczky, L. Pavlik, and J. Benes (1977)
Nondestructive Neutron Activation Assay of Submicrogram Quantities of Selenium, Radiochemical and Radioanalytical Letters, 29: 159-164.

77VOG 01 J. R. Vogt, editor (1977)
Proceedings of the Third International Conference on Nuclear Methods in Environmental and Energy Research, Columbia, Missouri, CONF-771072.

77WAT 02 G. R. Waterbury (1977)
Written Communication, Group CMB-1, Los Alamos Scientific Laboratory, Los Alamos, New Mexico.

77WIC 01 W. A. Wicks and R. W. Burke (1977)
Determination of Beryllium by Fluorescence Spectrometry, in 77MAV 01, pp. 85-89.

77WIL 01 D. R. Williams and J. S. Hislop (1977)
The Nondestructive Determination of Iodine in Soils and Biological Materials by High Energy Gamma-Photon Activation, Journal of Radioanalytical Chemistry, 39: 359-373.

77WIL 02 R. D. Willis and R. L. Walter (1977)
Computer Analysis of Proton Induced X-ray Emission Spectra, Nuclear Instruments and Methods, 142: 231-242.

77WIL 03 R. D. Willis, R. Walter, R. Shaw, and W. Gutknecht (1977)
Proton-Induced X-ray Emission Analysis of Thick and Thin Targets, Nuclear Instruments and Methods, 142: 67-77.

77YAN 01 Y. Yano, N. Odaka, S. Takei, and K. Nagashima (1977)
Determination of Trace Heavy Metals in Environmental Samples with Special Reference to Lead in Plants, Bunseki Kagaku, 26: T25-T29.

77YAS 01 K. Yasuda, M. Taguchi, S. Tamura, and S. Toda (1977)
Determination of Selenium in Biological Samples by Solvent Extraction-Graphite Furnace Atomic Absorption Spectrometry, Bunseki Kagaku, 26: 442-445.

77YAS 02 A. Yasui and C. Tsutsumi (1977)
Adaptability of Wet Decomposition Method to Food Samples for the Determination of Arsenic by Arsine Generation-Atomic Absorption Spectrophotometry, Bunseki Kagaku, 26: 809-814.

77ZIK 01 I. Zikovsky and E. A. Schweikert (1977)
Comparison of Nondestructive Proton and Neutron Activation: The Case of Biological Samples, Journal of Radioanalytical Chemistry, 37: 571-580.

78ALL 04 R. O. Allen and E. Steinnes (1978)
Determination of Vanadium in Biological Materials by Radiochemical Neutron Activation Analysis, Analytical Chemistry, 50: 1553-1555.

78BEA 01 R. D. Beaty and M. M. Cooksey (1978)
The Influence of Furnace Conditions on Matrix Effects in Graphite Furnace Atomic Absorption, Atomic Absorption Newsletter, 17: 53-58.

CODE	N	REFERENCE
78BEH	01	D. Behne and H. Jurgensen (1978) Determination of Trace Elements in Human Blood Serum and in the Standard Reference Material "Bovine Liver" by Instrumental Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 42: 447-453.
78BER	01	C. Bergerioux and L. Zikovsky (1978) Instrumental Neutron Activation Analysis of Brewer's Yeast, Journal of Radioanalytical Chemistry, 47: 173-179.
78BER	02	C. Bergerioux and L. Zikovsky (1978) Determination of 18 Trace Elements in Petroleum and its Derivatives by Neutron Activation with a Small Nuclear Reactor, Journal of Radioanalytical Chemistry, 46: 277-284.
78BYR	01	A. R. Byrne and L. Kosta (1978) Determination of Vanadium in Biological Materials at Nanogram Level by Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 44: 247-264.
78CAM	02	J. A. Campbell, J. Laul, K. Nielson, and R. Smith (1978) Separation and Chemical Characterization of Finely-sized Fly-ash Particles, Analytical Chemistry, 50: 1032-1040.
78CAP	01	S. G. Capar, J. Tanner, M. Friedman, and K. Boyer (1978) Multielement Analysis of Animal Feed, Animal Wastes, and Sewage Sludge, Environmental Science and Technology, 12: 785-790.
78CAR	01	M. B. Carvalho and D. M. Hercules (1978) Trace Arsenic Determination by Volatilization and X-ray Photoelectron Spectroscopy, Analytical Chemistry, 50: 2030.
78CAR	02	J. A. Carter, D. Donahue, J. Franklin, and R. Walker (1978) Trace Impurities in Coal and Fly Ash by Isotope Dilution Mass Spectrometry, in 78KAR 01, pp. 403-420.
78CAR	03	B. S. Carpenter, D. D'Agostino, and H. Yule, editors (1978) Computers in Activation Analysis and Gamma-ray Spectroscopy, Proceedings of the American Nuclear Society, Mayaguez, Puerto Rico, CONF-780421.
78COO	01	K. A. Cook and E. R. Grahma (1978) Title Unknown, Soil Science Society of America Journal, 42: 57; taken from 80KOS 02.
78DAH	01	R. L. Dahlquist and J. W. Knoll (1978) Inductively Coupled Plasma Atomic Emission Spectrometry: Analysis of Biological Materials and Soils for Major, Trace, and Ultra-trace Elements, Applied Spectroscopy, 32: 1-29.
78DAV	01	P. H. Davis, G. R. Dulude, R. M. Griffin, W. R. Matson, and E. W. Zink (1978), Determination of Total Arsenic at the Nanogram Level by High-speed Anodic Stripping Voltammetry, Analytical Chemistry, 50: 137-143.
78DER	01	M. Dermelj, J. Novak, V. Ravnik, and L. Kosta (1978) Rapid Determination of Uranium at the Nanogram Level in Geological and Biological Materials, Journal of Radioanalytical Chemistry, 44: 271-277.
78DOG	01	S. Dogan and W. Haerdi (1978) Preconcentration on Silver Wool of Volatile Organo-mercury Compounds in Natural Waters and Air and the Determination of Mercury, International Journal of Environmental Analytical Chemistry, 5: 157.
78EDI	01	R. D. Ediger, A. Knott, G. Peterson, and R. Beaty (1978) The Determination of Phosphours by Atomic Absorption using the Graphite Furnace, Atomic Absorption Newsletter, 17: 28.
78EGA	01	E. Egaas and K. Julshamn (1978) A Method for the Determination of Selenium and Mercury in Fish Products using the Same Digestion Procedure, Atomic Absorption Newsletter, 17: 135-138.
78EPS	01	M. S. Epstein, T. C. Rains, T. J. Brady, J. R. Moore, and I. L. Barnes (1978), Determination of Several Trace Metals in Simulated Fresh Water by Graphite Furnace Atomic Emission Spectrometry, Analytical Chemistry, 50: 874-880.
78EVA	01	W. H. Evans, J. I. Read, and B. E. Lucas (1978) Evaluation of a Method for the Determination of Total Cd, Pb, and Ni in Foodstuffs using Measurement by Flame Atomic Absorption Spectrophotometry, Analyst, 103: 580-591.
78FLA	01	J. Flanjak (1978) Atomic Absorption Spectrometric Determination of Arsenic and Selenium in Offal and Fish by Hydride Generation, Journal of the Association of Official Analytical Chemists, 61: 1299.
78FUD	01	N. Fudagawa and A. Kawase (1978) Determination of Nickel by Graphite Tube Furnace Atomic Absorption Spectrometry: Application to Nickel Determination in Plant Materials, Bunseki Kagaku, 27: 37-42.
78FUR	01	A. K. Furr, B. A. Roscoe, and T. F. Parkinson (1978) VAT-69: A Software System for Gamma Spectrometry, in 78CAR 03, pp. 352-366.
78GAI	01	T. P. Gaines and G. A. Mitchell (1978) Sample Preparation by Column Elution for Elemental Analysis of Plant Tissue, Journal of the Association of Official Analytical Chemists, 61: 1179-1181.
78GAL	01	M. Gallorini, R. R. Greenberg, and T. E. Gills (1978) Simultaneous Determination of As, Sb, Cd, Cr, Cu, and Se in Environmental Materials by Radiochemical Neutron Activation Analysis, Analytical Chemistry, 50: 1479-1481.
78GAN	01	S. Gangadharan and S. Yegnasubramanian (1978) Elemental Characterization through Instrumental Neutron Activation, Journal of Radioanalytical Chemistry, 42: 455.
78GEL	01	R. Geladi and F. Adams (1978) The Determination of Cadmium, Copper, Iron, Lead, and Zinc in Aerosols by Atomic Absorption Spectrometry, Analytica Chimica Acta, 96: 229-241.
78GIL	01	T. E. Gills, M. Gallorini, and H. L. Rook (1978) The Determination of Trace Elements in New Food Grain SRM's using Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 46: 21-25.
78GLA	01	E. S. Gladney, W. K. Hensley, and M. M. Minor (1978) Comparison of Three Techniques for the Measurement of Depleted Uranium in Soils, Analytical Chemistry, 50: 652.
78GLA	02	E. S. Gladney (1978) Determination of Arsenic, Antimony, Molybdenum, Thorium, and Tungsten in Silicates by Thermal Neutron Activation and Inorganic Ion Exchange, Analytical Letters, A11: 429-435.
78GLA	04	E. S. Gladney, D. B. Curtis, and E. T. Jurney (1978) Multielement Analysis of Major and Minor Elements by Thermal Neutron Induced Capture Gamma-ray Spectrometry, Journal of Radioanalytical Chemistry, 46: 299-308.

CODE	N	REFERENCE
78GOE	01	J. J. M. de Goeij, K. Volkers, P. Tjioe, and J. Kroon (1978) NBS SRM 1569 Brewer's Yeast: Is it an Adequate Standard Reference Material for Testing a Chromium Determination in Biological Materials?, Radiochemical and Radioanalytical Letters, 35: 139-146.
78GOE	03	J. J. M. de Goeij and C. Zegers (1978) Determination of Selenium in BCR Single Cell Protein via Destructive Neutron Activation Analysis, Interuniversitair Reactor Instituut report 133-78-11 (Delft).
78GOR	01	D. T. Gordon (1978) Atomic Absorption Spectrometric and Colorimetric Determination of Iron in Seafoods, Journal of the Association of Official Analytical Chemists, 61: 715-719.
78GRO	01	Z. Grobenski, M. Melcher, and B. Welz (1978) Richtigkeit bei der Bestimmung von Spurenelementen in Lebensmitteln mit der Graphitrohrtechnik AAS, Fresenius Zeitschrift fur Analytische Chemie, 290: 144-145.
78GUI	01	R. J. Guidoboni (1978) Spark-source Mass Spectrometry and Atomic Absorption Spectrometry for the Determination of Trace Elements in Coal, in 78KAR 01, pp. 421-434.
78HAY	01	B. W. Haynes (1978) Electothermal Atomic Absorption Determination of Arsenic and Antimony in Combustable Municipal Solid Waste, Atomic Absorption Newsletter, 17: 49-52.
78HIR	01	S. Hirai, S. Suzuki, and M. Okamoto (1978) Determination of Selenium in Biological Materials by Neutron Activation Analysis using Se-77m, Bunseki Kagaku, 27: 435.
78HIS	01	J. S. Hislop (1978) Gamma Activation Analysis: An Appraisal, Proceedings of the Analytical Division of the Chemical Society (London), 15: 193-205.
78HUD	01	V. Hudnik, S. Gomiscek, and M. Katic (1978) Title Unknown, Vestn. Slov. Kem. Durs., 25: 391; Taken from 80KOS 02.
78JAC	01	C. J. Jackson, D. Porter, A. Dennis, and P. Stockwell (1978) Automated Digestion and Extraction Apparatus for use in the Determination of Trace Metals in Foodstuffs, Analyst, 103: 317-331.
78JOL	01	R. K. Jolly, J. Kane, D. Buckle, G. Randers-Pehrson, W. Teoh and H. Aceto (1978), A Target Chamber for PIXE Analysis using Micorampere Beams of 4 MeV Protons, Nuclear Instruments and Methods, 151: 183-188.
78KAR	01	C. Karr, editor (1978) Analytical Methods for Coal and Coal Products, Vol. 1, Academic Press, New York.
78KAT	01	K. Kato (1978) Unpublished Data; Quoted in 78MAS 01.
78KEL	02	M. T. Kelly, J. E. Riley, and G. Gleason (1978) NAALSQ: A Program for Neutron Activation Analysis with Least Squares Deconvolution of the Gamma Spectra on a Minicomputer in 78CAR 03, pp. 456-464.
78KNO	01	A. C. Knott, J. C. Mills, and C. B. Belcher (1978) Synthetic Calibration Standards for Optical Emission and X-ray Spectrometry, Canadian Journal of Spectroscopy, 23: 105-111.
78KOB	01	K. Kobayashi and K. Kudo (1978) Determination of In, Cu, and Ni in Glassmaking Materials and NBS Standard Reference Materials by Substoichiometric Radioactivation Analysis, Journal of Radioanalytical Chemistry, 46: 265-276.
78KOR	01	G. A. Korba and E. S. Yeung (1978) Application of Fabry-Perot Interferometry in Multielement Flame Emission Analysis, Analytica Chimica Acta, 99: 209-216
78KUB	01	H. Kubo, R. Bernthal, and T. R. Wildeman (1978) Energy Dispersive X-ray Fluorescence Spectrometric Determination of Trace Elements in Oil Samples, Analytical Chemistry, 50: 899-903.
78KUB	02	T. Kubota and T. Ueda (1978) Atomic Absorption Spectrophotometric Determination of Antimony with use of Borohydride Solution as Reductant, Bunseki Kagaku, 27: 692-696.
78LAU	02	J. C. Laul, C. L. Wilkerson, and V. L. Crow (1978) Computer Methodology and its Applications to Geological and Environmental Matrices, in 78CAR 03, pp. 840-856.
78LIN	01	H. R. Linder, H. D. Seltner, and B. Schreiber (1978) Use of Dibenzyldithiocarbamate as Coprecipitant in the Routine Determination of 12 Heavy Metals in Pharmaceuticals by X-ray Fluorescence Spectroscopy, Analytical Chemistry, 50: 896-899.
78MAC	01	K. W. MacMurdo and W. W. Bowman (1978) Automated Absolute Activation Analysis with Californium-252 Sources, Report DP-1457, Savannah River Laboratory, E. I. Dupont de Nemours and Company.
78MAS	01	K. Masumoto and N. Suzuki (1978) Selective Coincidence Spectrometry in the Nondestructive Determination of Nickel in Geological Materials with High Energy Photon Activation Analysis, Journal of Radioanalytical Chemistry, 46: 121-135.
78MAT	01	M. Matthes, R. Flucht, and M. Stoeppler (1978) Beitrage zur Automatisierten Spurenanalyse, Fresenius Zeitschrift fur Analytische Chemie, 291: 20-26.
78MCC	01	L. T. McClendon (1978) Determination of Chromium in Biological Matrices by Neutron Activation: Application to Standard Reference Materials, Journal of Radioanalytical Chemistry, 42: 85-91.
78MCG	01	J. R. McGinley, G. J. Stock, E. A. Schweikert, J. B. Cross, R. Zeisler, and L. Zikovsky (1978), Nuclear and Atomic Activation with Heavy Ion Beams, Journal of Radioanalytical Chemistry, 43: 559-573.
78MCK	01	D. M. McKown and J. S. Morris (1978) Rapid Measurement of Selenium in Biological Samples using Instrumental Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 43: 411-420.
78MOR	01	A. E. Morgan and H. W. Werner (1978) Semiquantitative Analyses by Secondary Ion Mass Spectrometry using One Fitting Parameter, Mikrochimica Acta (Wien), 1978 II: 31-50.
78NAD	01	R. A. Nadkarni and G. H. Morrison (1978) Determination of Molybdenum by Neutron Activation and Srafion NMRR Ion Exchange Resin Separation, Analytical Chemistry, 50: 294-296.

CODE N REFERENCE

78NAD 02 R. A. Nadkarni and G. H. Morrison (1978)
Use of Standard Reference Materials as Multielement Irradiation Standards in Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 43: 347-369.

78NAK 01 R. Nakashima (1978)
UHF-Plasma Torch Emission Spectrometry for Cadmium, Lead, and Zinc by Vaporization Introduction, Bunseki Kagaku, 27: 199-203.

78PEL 01 P. A. Pella, K. E. Lorber, and K. F. J. Heinrich (1978)
Energy-Dispersive X-ray Spectrometric Analysis of Environmental Samples after Borate Fusion, Analytical Chemistry, 50: 1268-1271.

78PIE 01 Z. Pietrzak-Fils, G. L. Rehnberg, M. J. Favor, D. F. Cahill and J. W. Laskey (1978), Chronic Ingestion of Cadmium and/or Tritium in Rats: I. Accumulation and Distribution of Cadmium in Two Generations, Environmental Research, 16: 9-17.

78RIT 01 C. Ritter, S. Bergman, C. Cothern, and E. Zamierowski (1978)
Comparison of Sample Preparation Techniques for Atomic Absorption Analysis of Sewage Sludge and Soil, Atomic Absorption Newsletter, 17: 70-72.

78RYA 01 D. E. Ryan, D. C. Stuart, and A. Chattopadhyay (1978)
Rapid Multielement Neutron Activation Analysis with a SLOWPOKE Reactor, Analytica Chimica Acta, 100: 87-93.

78SIE 01 D. D. Siemer and H. Wei (1978)
Determination of Lead in Rocks and Glasses by Temperature Controlled Graphite Cup Atomic Absorption Spectrometry, Analytical Chemistry, 50: 147-151.

78SIM 01 P. C. Sims (1978)
Preprint, Purdue University Accelerator Laboratory; taken from 84NAD 02.

78SMI 01 R. G. Smith (1978)
Sources of Copper and Cadmium Contamination in Small Biological Samples, Talanta, 25: 173-175.

78STA 02 P. Standzenieks, A. Rindby, and E. Selin (1978)
Development of Low Power Monoenergetic X-ray Tube for Trace Element Analysis, Nuclear Instruments and Methods, 153: 269.

78SUD 01 R. F. Suddendorf and K. W. Boyer (1978)
Nebulizer for Analysis of High Salt Content Samples with Inductively Coupled Plasma Emission Spectrometry, Analytical Chemistry, 50: 1769-1771.

78SUG 01 A. Sugimae and R. K. Skogerboe (1978)
Dual Approach to the Emission Spectrographic Determination of Elements in Airborne Particulate Matter, Analytica Chimica Acta, 97: 1-11.

78SUG 02 A. Sugimae (1978)
Determination of Trace Amounts of Rare Earth Elements in Various Environmental Samples by Spark Source Mass Spectrography, Bunseki Kagaku, 27: 169-174.

78SZY 01 F. J. Szydlowski (1978)
Use of Branch Capillary for Ionization Buffer Addition in Flame Atomic Absorption Spectrometric Determination of Sodium and Potassium in Food Products, Atomic Absorption Newsletter, 17: 65-69.

78TAK 01 T. Takamatsu (1978)
Multielement Analysis of Rock and Sediment Samples by Nondispersive X-ray Fluorescence, Bunseki Kagaku, 27: 193-198.

CODE N REFERENCE

78TER 01 S. Terashima (1978)
Rapid Determination of Total Carbon and Sulfur in Geological Materials by Combustion and Infrared Absorption Photometry, Analytica Chimica Acta, 101: 25-31.

78TSU 01 K. Tsunoda, K. Fujiwara, and K. Fuwa (1978)
Determination of Chlorine and Bromine by Molecular Absorption of Aluminium Monohalides at High Temperature, Analytical Chemistry, 50: 861-865.

78UEM 01 Y. J. Uemura, Y. Kuno, H. Koyama, and T. Yamazaki (1978)
A New Way of Determining Concentrations in PIXE Trace Element Analysis, Nuclear Instruments and Methods, 153: 573-579.

78URE 01 A. M. Ure and J. R. Bacon (1978)
Scandium, Yttrium, and Rare Earth Content of Water Lily, Geochimica et Cosmochimica Acta, 42: 651-652.

78URE 02 A. M. Ure, M. P. Hernandez-Artiga, and M. C. Mitchell (1978)
A Carbon-rod Atomizer for the Determination of Cadmium and Lead in Plant Materials and Soil Extracts, Analytica Chimica Acta, 96: 37-43.

78VAL 01 I. Valente, M. J. Minski, and H. J. M. Bowen (1978)
Rapid Determination of Sb in Biological and Environmental Samples using Instrumental Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 45: 417-421.

78VIS 01 R. D. Vis, K. J. Wiederspahn, and H. Verheul (1978)
The Determination of the Elemental Composition of Glasses for Forensic Application using a Combination of Proton Induced X-ray Emission and Inelastic Proton Scattering, Journal of Radioanalytical Chemistry, 45: 407-416.

78WAN 01 L. E. Wangen and E. S. Gladney (1978)
Determination of Arsenic and Gallium in Standard Materials by Instrumental Epithermal Neutron Activation Analysis, Analytica Chimica Acta, 96: 271-277.

78WEA 01 J. N. Weaver (1978)
Neutron Activation Analysis of Trace Elements in Coal, Fly Ash, and Fuel Oils, in 78KAR 01, pp. 377-401.

78WEE 01 C. A. Weers, K. Hoede, and H. A. Das (1978)
Application of Selective Evaporation in the Determination of As and Br in Dry Biological Material by Thermal Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 42: 113-119.

78WEG 01 W. Wegscheider, K. E. Lorber, and K. Muller (1978)
Quantitative Intermethod Comparison of Energy Dispersive X-ray Fluorescence and Atomic Absorption Spectrometry for the Analysis of Urban Dusts and Fly Ash, International Journal of Environmental Analytical Chemistry, 5: 171-187.

78WEL 01 B. Welz and M. Melcher (1978)
Bestimmung von Arsen und Selen in Korperflussigkeiten und Geweben mit der Hydrid-methode, Fresenius Zeitschrift fur Analytische Chemie, 290: 106-107.

79ABE 01 F. N. Abercrombie, M. D. Silvester, and R. B. Cruz (1979)
Simultaneous Multielement Analysis of Biologically Related Samples with RF-ICP, in 79RIS 01, pp. 10-25.

79ABO 01 M. D. K. Abo-Rady (1979)
Schwermetallbestimmung in zwei Biologischen und zwei Geologischen Standards mit Hilfe der Atom-Absorptions Spectroskopie, Fresenius Zeitschrift fur Analytische Chemie, 296: 380-382.

CODE N REFERENCE

79ABU 01 J. Abukawa, H. Higuchi, K. Sato, and S. Bando (1979)
A Comparison of Various Methods for Determination of Cobalt in Marine Biological Materials, Bunseki Kagaku, 28: 506-508.

79AHM 01 S. Ahmad, M. S. Chaudhry, and I. H. Qureshi (1979)
Determination of Toxic Elements in Tobacco Products by Instrumental Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 54: 331-341.

79AND 01 D. L. Anderson, M. Failey, W. Zoller, and G. Gordon (1979)
Neutron Capture Prompt Gamma-ray Activation Analysis: Multielement Measurements on Various Materials, in 79CHR 01, pp. 546-548.

79BAR 03 R. M. Barnes, editor (1979)
Applications of Plasma Emission Spectrochemistry, Heyden, Philadelphia.

79BEN 01 G. E. Bentley, L. Markowitz, and R. Meglen (1979)
Analysis of Molybdenum in Biological Materials, in 79RIS 01, pp. 35-39.

79BLO 01 A. J. Blotcky, C. Falcone, V. A. Medina, E. P. Rack, and D. W. Hobson (1979), Determination of Trace Level Vanadium in Marine Biological Samples by Chemical Neutron Activation Analysis, Analytical Chemistry, 51: 178-182.

79BOG 01 S. Bogdanski, I. Shakir, W. Stephen, and A. Townshend (1979)
Determination of Trace Amounts of Sulphate by Molecular Emission Cavity Analysis using a Vaporization System, Analyst, 104: 886-890.

79BRA 01 F. P. Brauer and R. S. Strebin (1979)
Title Unknown, in Nuclear Activation Techniques in the Life Sciences, IAEA, Vienna, p. 27; Taken from 80GVA 01.

79BRE 01 J. J. la Brecque (1979)
Interferences in the Determination of Titanium in Silicate Rocks and Venezuelan Laterites by Atomic Absorption Spectroscopy, Applied Spectroscopy, 33: 389-393.

79BRE 02 J. J. la Brecque (1979)
Decomposition and Determination of Aluminium and Silicon in Venezuelan Laterites by Atomic Absorption Spectroscopy, Chemical Geology, 26: 321-329.

79BRI 02 C. Brihaye (1979)
Analyse de Traces par la Methode Electrochimique Utilisant une Electrode Disque-Anneau, Doctoral Thesis, University of Liege, Belgium (1979-1980).

79BYR 01 A. R. Byrne (1979)
Extraction of Some Trace Elements as Iodides with Methylisobutyl Ketone and its Applications in Neutron Activation Analysis, Radiochemical and Radioanalytical Letters, 40: 1-16.

79CAH 01 R. A. Cahill (1979)
Private Communication, Illinois State Geological Survey.

79CHA 02 A. Chattopadhyay, K. M. Ellis, and K. N. de Silva (1979)
Title Unknown, in Nuclear Activation Techniques in the Life Sciences, IAEA, Vienna, pp. 667-682; Taken from 79IAE 01.

79CHA 04 A. Chattopadhyay and K. N. de Silva (1979)
Pseudo-Cyclic Neutron Activation Analysis of Ag, F, Rb, Sc, and Se in Biological Samples, Transactions of the American Nuclear Society, 32: 185-186.

CODE N REFERENCE

79CHR 01 R. E. Chrien and W. R. Kane, editors (1979)
Neutron Capture Gamma-ray Spectroscopy, Plenum Press, New York.

79COO 01 M. Cooksey and W. B. Barnett (1979)
Sequential Multielement Atomic Absorption Analysis of Agricultural Samples, Atomic Absorption Newsletter, 18: 1-4.

79COR 01 R. Cornelis, L. Mees, J. Hoste, J. Ryckenbusch, J. Versieck, and F. Barbier (1979), Title Unknown, in Nuclear Techniques in the Life Sciences 1978, IAEA, Vienna, p. 165; Taken from 80HEY 01.

79CRO 01 J. D. Cross and H. Smith (1979)
The Determination of Bromine in Biological Material by Thermal Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 48: 191-196.

79DAB 01 R. W. Dabeka, A. D. McKenzie, and H. Conacher (1979)
Microdiffusion and Fluoride Specific Electrode Determination of Fluoride in Foods, Journal of the Association of Official Analytical Chemists, 62: 1065-1068.

79DAB 02 R. W. Dabeka (1979)
Graphite Furnace Atomic Absorption Spectrometric Determination of Lead and Cadmium in Foods after Solvent Extraction and Stripping, Analytical Chemistry, 51: 902-907.

79DAL 01 L. S. Dale (1979)
The Emission Spectrographic Determination of Boron in Silicate Materials, Applied Spectroscopy, 33: 404-406.

79DAS 01 H. A. Das, A. Faanhof, and H. A. van der Sloot (1979)
Errors in Instrumental Neutron Activation Analysis: I. Determination of the Peak Area, Journal of Radioanalytical Chemistry, 54: 289-301.

79DER 01 M. Dermelj, A. Vakselj, V. Ravnik, and B. Smodis (1979)
Applicability of Carbamate Extraction to Radiochemical Separation and Determination of Cd, Co, Cu, and Zn in Various Biosphere Samples, Radiocnemical and Radioanalytical Letters, 41: 149-160.

79DES 01 H. B. Desai, R. K. Iyer, and S. R. Kayasth (1979)
Precipitation of Mercury as Zinc Mercuro-thiocyanate, Application to Activation Analysis, Radiochemical and Radioanalytical Letters, 41: 299-306.

79EDI 01 R. D. Ediger and D. L. Wilson (1979)
The Performance of an Inductively Coupled Plasma on the Model 5000 Atomic Absorption Spectrophotometer, Atomic Absorption Newsletter, 18: 41-45.

79EPS 01 M. Epstein, S. Nikdel, N. Omenetto, R. Reeves, J. Bradshaw, and J. Winefordner (1979), Inductively Coupled Argon Plasma as an Excitation Source for Flame Atomic Fluorescence Spectrometry, Analytical Chemistry, 51: 2071-2077.

79EPS 03 M. S. Epstein and A. T. Zander (1979)
Direct Determination of Barium in Sea and Estuarine Water by Graphite Furnace Atomic Spectrometry, Analytical Chemistry, 51: 915-918.

79EVA 01 W. H. Evans, F. J. Jackson, and D. Dellar (1979)
Evaluation of a Method for Determination of Total Antimony, Arsenic, and Tin in Foodstuffs using Measurement by Atomic Absorption Spectrophotometry with Atomization in a Silica Tube using the Hydride Generation Technique, Analyst, 104: 16-30.

CODE N REFERENCE

79FAA 01 A. Faanhof and H. A. Das (1979)
Analysis of Tobacco by Instrumental Epithermal Neutron Activation Analysis, Radiochemical and Radioanalytical Letters, 41: 367-374.

79FAI 01 M. P. Failey, D. Anderson, W. Zoller, G. Gordon, and R. Lindstrom (1979), Neutron-capture Prompt Gamma-ray Activation Analysis for Multielement Determination in Complex Samples, Analytical Chemistry, 51: 2209-2221.

79FEL 01 C. Feldman (1979)
Improvements in the Arsine Accumulation-Helium Glow Detector Procedure for Determining Traces of Arsenic, Analytical Chemistry, 51: 664-669.

79FLA 02 J. Flanjak and H. Y. Lee (1979)
Trace Metal Content of Livers and Kidneys of Cattle, Journal of Agricultural Science and Food Chemistry, 30: 503-507.

79FRE 01 G. Frechette, J. Hebert, T. Thinh, R. Rousseau, and F. Claisse (1979), X-ray Fluorescence Analysis of Cements, Analytical Chemistry, 51: 957-961.

79FRU 01 J. S. Fruchter and M. R. Petersen (1979)
Environmental Characterization of Products and Effluents from Coal Conversion Processes, in 79KAR 01, pp. 247-275.

79GEL 01 P. Geladi and F. Adams (1979)
The Determination of Beryllium and Manganese in Aerosols by Atomic Absorption Spectrometry with Electrothermal Atomization, Analytica Chimica Acta, 105: 219-231.

79GIA 01 R. D. Giauque, R. B. Garrett, and L. Y. Goda (1979)
Determination of Trace Elements in Light Element Matrices by X-ray Fluorescence Spectrometry with Incoherent Scattered Radiation as an Internal Standard, Analytical Chemistry, 51: 511-516.

79GIA 03 R. D. Giauque (1979)
Private Communication, Lawrence Berkeley Laboratory.

79GLA 02 E. S. Gladney and D. R. Perrin (1979)
Determination of Bromine in Biological, Soil, and Geological Standard Reference Materials by Instrumental Epithermal Neutron Activation, Analytical Chemistry, 51: 2015-2018.

79GLA 03 E. S. Gladney and D. R. Perrin (1979)
Quantitative Analysis of Silicates by Instrumental Epithermal Neutron Activation using (n,p) Reactions, Analytical Chemistry, 51: 2297-2300.

79GLA 04 E. S. Gladney, D. B. Curtis, and E. T. Jurney (1979)
Simultaneous Determination of Nitrogen, Carbon, and Hydrogen by Thermal Neutron Prompt Gamma-ray Spectrometry, Analytica Chimica Acta, 110: 339-343.

79GOD 01 W. C. Godbeer and D. J. Swaine (1979)
Cadmium in Coal and Fly Ash, in Trace Substances in Environmental Health-XIII, D. D. Hemphill (editor), University of Missouri, Columbia.

79GRE 01 R. R. Greenberg (1979)
Trace Element Characterization of the NBS Urban Particulate Matter Standard Reference Material by Instrumental Neutron Activation Analysis, Analytical Chemistry, 51: 2004-2006.

79HEC 01 M. H. Heckman (1979)
Analysis of Foods for Iodine: Interlaboratory Study, Journal of the Association of Official Analytical Chemists, 62: 1045

CODE N REFERENCE

79HEI 03 H. Heinrichs (1979)
Determination of Lead in Geological and Biological Materials by Graphite Furnace Atomic Absorption Spectrometry, Fresenius Zeitschrift fur Analytische Chemie, 295: 355-361.

79HEI 04 J. Heinonen (1979)
Assurance and Control of Quality in Trace Element Analysis, in 79IAE 01, pp. 7-25.

79HER 01 J. L. Hern (1979)
Elemental Analysis in Agriculture using Inductively Coupled Plasma Atomic Emission Spectroscopy, in 79BAR 03.

79HIL 01 E. P. Hilliard and J. D. Smith (1979)
Minimum Sample Preparation for the Determination of Ten Elements in Pig Faeces and Feeds by Atomic Absorption Spectrophotometry and A Spectrophotometric Procedure for Total Phosphorus, Analyst, 104: 313-322.

79HOE 01 D. Hoede and H. A. van der Sloot (1979)
Application of Hydride Generation for the Determination of Antimony and Arsenic in Biological Material by Neutron Activation Analysis, Analytica Chimica Acta, 111: 321-325.

79HOE 02 M. Hoenig, P. van Hoeyweghen, and J. Liboton (1979)
Evaluation a l'aide d'etalons Internationaux de Deux Methodes de Mineralisation des Vegetaux, Analusis, 7: 104.

79IAE 01 International Atomic Energy Agency (1979)
Proceedings of an International Symposium on Nuclear Activation Techniques in the Life Sciences held by the IAEA in Vienna, May 1978, STI/PUB/492, ISBN 92-0-010079-1.

79IMA 01 A. Imahori, I. Fukushima, S. Shiobara, Y. Yanagida, and K. Tomura (1979), Multielement Neutron Activation Analysis of Human Scalp Hair: A Local Population Survey in the Tokyo Metropolitan Area, Journal of Radioanalytical Chemistry, 52: 167-180.

79IMA 03 A. Imahori, I. Fukushima, S. Shiobara, K. Tomura, M. Suzuki, M. Yukawa, and M. Terai (1979), A Study of Trace Element Concentrations in Human Hair of Some Local Populations in Japan, in 79IAE 01, pp. 563-571.

79INU 01 T. Inui, N. Fudagawa, and A. Kawase (1979)
Extraction and Atomic Absorption Spectrometric Determination of Bismuth with Electrothermal Atomization, Fresenius Zeitschrift fur Analytische Chemie, 299: 190-193.

79JER 01 R. E. Jervis and B. Tiefenbach (1979)
Arsenic Accumulation in People Working With and Living Near a Gold Smelter, in 79IAE 01, pp. 627-642.

79JON 01 J. D. Jones, P. B. Kaufman, and W. L. Rigot (1979)
Method for Determination of Silicon in Plant Materials by Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 50: 261-275.

79KAN 02 Y. Kanda and N. Suzuki (1979)
Redox Substoichiometric Determination of Arsenic in Biological Materials by Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 54: 7-14.

79KAR 01 C. Karr (1979)
Analytical Method for Coal and Coal Products, Academic Press New York, Vol. III.

79KNE 01 J. R. Knechtel and J. L. Fraser (1979)
Wet Digestion Method for the Determination of Mercury in Biological and Environmental Samples, Analytical Chemistry, 51: 315-317.

CODE	N	REFERENCE
79KOB	01	K. Kobayashi and K. Kudo (1979) Rapid Determination of In, Ni, and Cu in NBS Standard Reference Material by Substoichiometric Radioactivation Analysis, Journal of Radioanalytical Chemistry, 54: 49-58.
79KOB	03	K. Kobayashi and K. Kudo (1979) Determination of Multielement in Optical Waveguide and Standard Reference Materials by Instrumental Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 53: 233-246.
79KRA	01	J. A. Krasowski and T. R. Copeland (1979) Matrix Interferences in Furnace Atomic Absorption Spectrometry, Analytical Chemistry, 51: 1843-1849.
79KUC	01	J. Kucera (1979) Epithermal Neutron Activation Analysis of Trace Elements in Biological Materials, Radiochemical and Radioanalytical Letters, 38: 229-246.
79KUE	01	E. C. Kuehner and P. A. Pella (1979) Energy-Dispersive X-ray Spectrometric Analysis of NBS Standard Reference Material 1571 Orchard Leaves after Oxidation and Borate Fusion, Applied Spectroscopy, 33: 632.
79LAK	01	E. L. Lakomaa and P. Eklund (1979) Trace Element Analysis of Human Cataractous Lenses by Neutron Activation Analysis and Atomic Absorption Spectrometry, in 79IAE 01, pp. 333-343.
79LIK	01	W. Likusser (1979) Untersuchungen uber das Morpholin-N-dithio-carbonsaure Morpholinium (MDCM) als Reagens in der Quantitativen Analytik.X, Mikrochimica Acta (Wien), 1979II: 43-52.
79LOC	01	J. Locke (1979) The Determination of Eight Elements in Human Liver Tissue by Flame Atomic Absorption Spectrometry in Sulphuric Acid Solution, Analytica Chimica Acta, 104: 225-231.
79LPI	01	Lunar and Planetary Institute (1979) Proceedings of the Tenth Lunar and Planetary Science Conference, Houston, Texas; Geochimica et Cosmochimica Acta Supplement 11.
79MAN	01	N. F. Mangelson, M. Hill, K. Neilson, D. Eatough, R. Izatt, J. Christensen, and D. Richards (1979), Proton Induced X-ray Emission Analysis of Pima Indian Autopsy Tissues, Analytical Chemistry, 51: 1187-1194.
79MAT	01	K. Matsumoto and K. Fuwa (1979) Major and Trace Element Determination in Geological and Biological Samples by Energy-Dispersive X-ray Fluorescence Spectrometry, Analytical Chemistry, 51: 2355-2358.
79MAT	02	T. D. Mathews, J. Boyne, R. Davis, and D. Simmons (1979) The Distribution of Copper and Iron in South Carolina Oysters, Journal of Environmental Science and Health, A14: 683-694.
79MAY	01	S. May and D. Piccot (1979) Dosages de Traces D'Elements Toxiques (As, Cd, Hg, Sb, Se) dans les Proteines Synthetiques, par Radioactivation Neutronique, Analusis, 7: 133-137.
79MCQ	01	N. R. McQuaker, P. D. Kluckner, and G. N. Chang (1979) Calibration of an Inductively Coupled Plasma Atomic Emission Spectrometer for the Analysis of Environmental Materials, Analytical Chemistry, 51: 888-895.
79MCQ	02	N. R. McQuaker, D. F. Brown, and P. D. Kluckner (1979) Digestion of Environmental Materials for Analysis by Inductively Coupled Plasma Atomic Emission Spectrometry, Analytical Chemistry, 51: 1082-1084.
79MEN	01	E. Mendelovici, J. J. LaBrecque, and R. E. Villalba (1979) Calcium and Magnesium Determination in Silicates and Venezuelan Laterites by Atomic Absorption Spectroscopy: Interference Studies in the Fluoboric - Boric Acid Matrix, Chemical Geology, 24: 199-209.
79MER	01	R. N. Merryfield and R. C. Loyd (1979) Simultaneous Determination of Metals in Oil by Inductively Coupled Plasma Emission Spectrometry, Analytical Chemistry, 51: 1965-1968.
79MIL	01	R. J. Miller and D. J. Ingle (1979) Unpublished Data; Taken from 81MAR 01.
79MIZ	01	A. Mizuike and A. Iino (1979) Coating of Borosilicate Glass Containers for Preventing Contamination in Trace Element Analysis, Analytica Chimica Acta, 111: 251-256.
79MON	01	J. R. Montgomery and M. T. Price (1979) Release of Trace Metals by Sewage Sludge and the Subsequent Uptake by Members of a Turtle Grass Mangrove Ecosystem, Environmental Science and Technology, 13: 546-549.
79NAR	01	H. Narasaki (1979) Determination of Cadmium in Polished Rice by Low-temperature Ashing and Atomic Absorption Spectrometry, Anaytica Chimica Acta, 104: 393-395.
79NIC	01	L. W. Nicholson and K. Rengen (1979) Determination of Arsenic in Some Lake Michigan Fish using Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 54: 355-360.
79ORV	01	E. Orvini and R. Delfanti (1979) Determination of Arsenic at Nanogram Level in Biological Tissues by Radiochemical Activation Analysis, Radiochemical and Radioanalytical Letters, 37: 199-206.
79PAV	02	L. Pavlik, J. Kalouskova, M. Vobecky, J. Dedina, J. Benes, and J. Parizek (1979), Selenium Levels in the Kidneys of Male and Female Rats, in 79IAE 01, pp. 213-223.
79PEA	01	S. Peats (1979) Determination of Arsenic in Seaweed and Related Products by Atomic Absorption Spectrophotometry using the MHS-10 Hydride Generation System, Atomic Absorption Newsletter, 18: 118-120
79PET	01	P. Peterson, C. Girling, D. Klumpp, and M. Minski (1979) Title Unknown, in Nuclear Activation Techniques in the Life Sciences, IAEA, Vienna, p. 103; Taken from 80KOS 02.
79PLA	01	L.-O. Plantin (1979) Trace Elements in Cardiovascular Diseases, in 79IAE 01, pp. 321-330.
79PRA	01	J. W. Prather, J. A. Guin, and A. R. Tarrer (1979) X-ray Fluorescence Analysis of Trace Elements in Coal and Solvent Refined Coal, in 79KAR 01, pp. 357-369.
79RAI	01	R. M. Raie and H. Smith (1979) The Determination of Selenium in Biological Materials by Thermal Neutron Activation Analysis and Atomic Absorption Spectrometry, Journal of Radioanalytical Chemistry, 48: 185-190.

CODE	N	REFERENCE
79REE	01	J. Reednick (1979) A Unique Approach to Atomic Spectroscopy: High Energy Plasma Excitation and High Resolution Spectrometry, American Laboratory, 11: 53-62.
79REI	01	J. E. O'Reilly and D. G. Hicks (1979) Slurry-Injection Atomic Absorption Spectrometry for Analysis of Whole Coal, Analytical Chemistry, 51: 1905-1915.
79REN	01	K. Rengan, J. P. Haushalter, and J. D. Jones (1979) Simultaneous Determination of Arsenic and Antimony in Environmental Samples by Radiochemical Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 54: 347-353.
79REN	02	M. J. Renan (1979) The Determination of Elements Not Previously Certified in International Biological Reference Materials, Radiochemical and Radioanalytical Letters, 40: 87-102.
79REN	03	M. J. Renan, B. Drennan, R. Keddy, and J. Sellschop (1979) Oesophageal Cancer in the Transkei: Determination of Trace Element Concentrations in Selected Plant Material by INAA, in 79IAE 01, pp. 479-494.
79RIS	01	T. H. Risby, editor (1979) Ultratrace Metal Analysis in Biological Sciences and Environment, Advances in Chemistry Series, American Chemical Society, Washington, D. C.
79ROB	01	W. B. Robbins, J. A. Caruso, and F. L. Fricke (1979) Determination of Ge, As, Se, Sn, and Sb in Complex Samples by Hydride Generation - Microwave-induced Plasma Atomic Emission Spectrometry, Analyst, 104: 34-40.
79ROS	02	R. J. Rosenberg (1979) Radiochemical Activation Analysis of Arsenic, Selenium, and Antimony in Biological Samples, Journal of Radioanalytical Chemistry, 50: 109-114.
79ROS	03	G. Rossi and A. Colombo (1979) Reference Materials for Chemical Analysis: Highlights on the Activity of JRC-ISPRA Laboratories, Fresenius Zeitschrift fur Analytische Chemie, 297: 13-17.
79SAT	01	T. Sato and T. Kato (1979) Determination of Trace Elements in Various Organs of Rats by Thermal Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 53: 181-190.
79SCH	02	H. Schorin (1979) Quantitative Determination of Si, Al, Ti, and Fe in Laterite and Bauxites by X-ray Fluorescence using a Computer for Correction of Interelement Effects, Applied Spectroscopy, 33: 634-637.
79SIL	01	D. Silberman and G. L. Fisher (1979) Room-Temperature Dissolution of Coal Fly Ash for Trace Metal Analysis by Atomic Absorption, Analytica Chimica Acta, 106: 299-307.
79SMI	01	R. D. Smith, J. A. Campbell, and K. K. Nielson (1979) Concentration Dependence upon Particle Size of Volatilized Elements in Fly Ash, Environmental Science and Technology, 13: 553-560.
79STE	01	E. Steinnes (1979) Instrumental Activation Analysis of Coal and Coal Ash with Thermal and Epithermal Neutrons, in 79KAR 01, pp. 279-302.
79STO	01	M. Stoeppler, P. Valenta, and H. W. Nurnberg (1979) Application of Independent Methods and Standard Materials: An Effective Approach to Reliable Trace and Ultratrace Analysis of Metals and Metalloids in Environmental and Biological Matrices, Fresenius Zeitschrift fur Analytische Chemie, 297: 22-34.
79SZY	01	F. J. Szydlowski (1979) Boron in Natural Waters by Atomic Absorption Spectrometry with Electrothermal Atomization, Analytica Chimica Acta, 106: 121-125.
79SZY	02	F. J. Szydlowski and D. L. Dunmire (1979) Semi-automatic Digestion and Automatic Analysis for Selenium in Animal Feeds, Analytica Chimica Acta, 105: 445-449.
79TAG	01	M. Taguchi, K. Yasuda, M. Hashimoto, and S. Toda (1979) Some Improvements for Mercury Determination in Marine Organisms by Atomic Absorption Spectrometry, Bunseki Kagaku, 28: T33-T38.
79TAM	01	Y. Tamari, K. Hiraki, and Y. Nishikawa (1979) Fluorometric Determination of Selenium in Sediments with 2,3-Diaminonaphthalene, Bunseki Kagaku, 28: 164-169.
79TJI	01	P. Tjioe, J. de Goeij, and K. Volkers (1979) A Routine Chromium Determination in Biological Materials: Application to Various Reference Materials and Standard Reference Materials, Interuniversitair Reactor Instituut report 133-79-02 (Delft).
79ULL	01	A. H. Ullman, B. Pollard, G. Boutillier, R. Bateh, P. Hanley and J. Winefordner (1979), Computer-Controlled Multielement Atomic Emission/Fluorescence Spectrometer System, Analytical Chemistry, 51: 2382-2387.
79UNR	01	D. M. Unruh, R. Hutchison, and M. Tatsumoto (1979) U-Th-Pb Age of the Barwell Condrite: Anatomy of a "Discordant" Meteorite, in 79LPI 01, pp. 1011-1030.
79VEI	01	C. Veillon, W. R. Wolf, and B. E. Guthrie (1979) Determination of Chromium in Biological Materials by Stable Isotope Dilution, Analytical Chemistry, 51: 1022-1024.
79VER	01	J. Versieck, J. Hoste, J. de Rudder, F. Barbier, and L. Vanballenberghe (1979), Determination of Chromium in Bowen's Kale, NBS Bovine Liver, and Brewers Yeast, Before and After Dry Ashing, Analytical Letters, 12: 555-562.
79VIJ	01	P. N. Vijan (1979) Determination of Antimony in Environmental Samples by AA, American Laboratory, 11: 32-43.
79VOB	01	M. Vobecky, J. Dedina, L. Pavlik, and J. Valasek (1979) Gamma-ray Interferences in the Determination of Selenium by the INAA Method, Radiochemical and Radioanalytical Letters, 38: 197-204.
79WAR	01	N. I. Ward, R. Stephens, and D. E. Ryan (1979) Comparison of Three Analytical Methods for the Determination of Trace Elements in Whole Blood, Analytica Chimica Acta, 110: 9-19.
79WAR	02	N. I. Ward and D. E. Ryan (1979) Multielement Analysis of Blood for Trace Metals by Neutron Activation Analysis, Analytica Chimica Acta, 105: 185-197.
79WAT	02	J. H. Watkinson (1979) Semi-automated Fluorometric Determination of Nanogram Quantities of Selenium in Biological Material, Analytica Chimica Acta, 105: 319-325.

CODE	N	REFERENCE
79WEG	01	W. Wegscheider, G. Knapp, and H. Spitzy (1979) Sequential Testing as an Efficient Screening Method for Interferences in Routine Analysis as Applied to Atomic Absorption Spectrometry with Flame and Graphite Furnace Atomization, Talanta, 26: 25-31.
79WES	01	M. H. West, J. F. Molina, C. L. Yuan, and D. G. Davis (1979) Determination of Metals in Waters and Organic Materials by Flameless Atomic Absorption Spectrometry with a Wire Loop Atomizer, Analtyical Chemistry, 51: 2370-2375.
79YAN	01	M. H. Yang, C. L. Tseng, and G. Tolg (1979) Determination of Small Amounts of Boron by Radiation Decomposition of Chloroacetic Acid Solution, Talanta, 26: 705-711.
79YAS	01	K. Yasuda, S. Toda, C. Igarashi, and S. Tamura (1979) Extraction System for Solvent Extraction-Graphite Furnace Atomic Absorption Spectrometry, Analytical Chemistry, 51: 161-163.
79ZEI	01	R. Zeisler, F. Lux, and H. Seidenberger (1979) Studies on the Distribution of Platinum in Tumor-Bearing Rats after the Administration of Pt Coordination Complexes used in Cancer Chemotherapy, in 79IAE 01, pp. 467-476.
80AGE	01	H. Agemian, D. P. Sturtevant, and K. D. Austen (1980) Simultaneous Acid Extraction of Six Trace Metals from Fish Tissue by Hot-Block Digestion and Determination by Atomic Absorption Spectrometry, Analyst, 105: 125-130.
80AGE	02	H. Agemian and R. Thompson (1980) Simple Semi-automated Atomic Absorption Spectrometric Method for the Determination of Arsenic and Selenium in Fish Tissue, Analyst, 105: 902-907.
80AGE	03	H. Agemian and E. Bedek (1980) A Semi-automated Method for the Determination of Total Arsenic and Selenium in Soils and Sediments, Analytica Chimica Acta, 119: 323-330.
80AHM	01	S. Ahmad, M. S. Chaudhary, and I. H. Qureshi (1980) Determination of Rare Earths in Low Grade Uranium Ores and SRM Rock by Instrumental Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 57: 185-193.
80AND	01	D. L. Anderson, M. Failey, G. Gordon, and W. Zoller (1980) Instrumental Prompt Gamma Activation Analysis of Energy Related Samples and Standards, Fourth International Conference on Nuclear Methods in Environmental and Energy Research, University of Missouri, preprint.
80ANO	01	Anonymous (1980) LECO CR-12 Carbon Determinator, LECO Corporation, St. Joseph Michigan.
80ARO	01	H. S. Arora, C. Pugh, L. Hossner, and J. Dixon (1980) Forms of Sulfur in East Texas Lignitic Coal, Journal of Environmental Quality, 9: 383-386.
80AUG	01	J. H. Augustson, J. W. Haynes, and T. W. Sanders (1980) The Determination of Uranium in Biological Materials by Neutron Activation Analysis using the Fission Product I-134, Journal of Radioanalytical Chemistry, 60: 373-383.
80BER	01	C. Berthelot, G. Carraro, and V. Verdingh (1980) Non-destructive Multielement Photon Activation Analysis of River Sediments, Journal of Radioanalytical Chemistry, 60: 443-451.
80BER	02	C. Bergerioux and W. Haerdi (1980) Coprecipitation of Dissolved Trace Elements with Combined Organic Precipitating Reagents for use in X-ray Fluorescence Analysis: I. 1,10-Phenanthrolin and Tetraphenyl Boron, Analusis, 8: 169-173.
80BRA	01	P. Bratter and P. Schramel, editors (1980) Trace Element Analytical Chemistry in Medicine and Biology, Proceedings of the First International Workshop, Neuherberg, Federal Republic of Germany, W. de Gruyter, Berlin.
80BRE	01	I. Brenner, A. Watson, G. Russell, and M. Goncalves (1980) A New Approach to the Determination of the Major and Minor Constituents in Silicate and Phosphate Rocks, Chemical Geology, 28: 321-330.
80BUA	01	P. Buat-Menard, C. Lambert, M. Arnold, and R. Chesselet (1980), Multielement Neutron Activation Analysis Towards the Geochemistry of Particulate Matter Exchange Between Continent-Atmosphere-Ocean, Journal of Radioanalytical Chemistry, 55: 445-452.
80BYR	01	A. R. Byrne (1980) Unpublished Data; taken from 80KOS 02.
80CAN	01	C. E. Cann and S. G. Prussin (1980) Radiochemical Determination of Short-Lived Radionuclides in Neutron Activated Biological Samples, International Journal of Applied Radiation and Isotopes, 31: 446-447.
80CAS	01	V. R. Casella, C. Bishop, A. Glosby, and C. Phillips (1980) Radiochemical Determination of Uranium, Thorium, and Pb-210 in Coal and Coal Ash: Radioelement Analysis: Progress and Problems, Proceedings of the Twenty-third Conference on Analytical Chemistry in Energy Technology, W. S. Lyon (ed.), Ann Arbor Science Publishers, Ann Arbor, Michigan, p. 271.
80CHA	01	S. S. Chao and E. E. Pickett (1980) Trace Chromium Determination by Furnace Atomic Absorption Spectrometry Following Enrichment by Extraction, Analytical Chemistry, 52: 335-339.
80CHA	02	M. S. Chaudhary, S. Ahmad, and I. H. Qureshi (1980) Simultaneous Determination of Thorium and Uranium in Ores and SRMS by Instrumental Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 57: 137-146.
80CHA	08	C. L. Chakrabarti, C. C. Wan, and W. C. Li (1980) Direct Determination of Traces of Copper, Zinc, Lead, Cobalt Iron, and Cadmium in Bovine Liver by Graphite Furnace Atomic Absorption Spectrometry using the Solid Sampling and the Platform Techniques, Spectrochimica Acta, 35B: 93-105.
80CHA	09	C. L. Chakrabarti, C. C. Wan, and W. C. Li (1980) Atomic Absorption Spectrometric Determination of Cd, Pb, Zn, Cu, Co, and Fe in Oyster Tissue by Direct Atomization from the Solid State using the Graphite Furnace Platform Spectrochimica Acta, 35B: 547-560.
80CHR	01	J. D. Christensen and L. Kryger (1980) Reductive Potentiometric Stripping Analysis, Analytica Chimica Acta, 118: 53-64.
80CLA	01	P. J. Clark, R. Zingaro, K. Irgolic, and A. McGinley (1980) Arsenic and Selenium in Texas Lignite, International Journal of Environmental Analytical Chemistry, 7: 295-314.
80CRE	01	E. A. Crecelius, E. A. Leppel, J. C. Laul, L. A. Rancitelli, and R. L. McKeever (1980), Background Air Particulate Chemistry near Colstrip, Montana, Environmental Science and Technology, 14: 422-428.

CODE	N	REFERENCE
80DAL	01	P. Dalheim (1980) Application of the Fundamental Parameter Model to Energy Dispersive X-ray Fluorescence Analysis of Complex Silicates, Advances in X-ray Analysis, New York, Plenum Press, 23: 71.
80DON	01	E. M. Donaldson (1980) Determination of Chromium in Ores, Rocks, and Related Materials, Iron, Steel, and Nonferrous Alloys by Atomic Absorption Spectrophotometry after Separation by Tribenzylamine-Chloroform Extraction, Talenta, 27: 779-786.
80DOR	01	A. Dornemann and H. Kleist (1980) Bestimmung von Nanospuren Nickel in Biologischem Matrix, Fresenius Zeitschrift fur Analytische Chemie, 300: 197-199.
80DSI	01	A. P. D'Silva, G. W. Rice, and V. A. Fassel (1980) Atmospheric Pressure Active Nitrogen (APAN) - A New Source for Analytical Spectroscopy, Applied Spectroscopy, 34: 578.
80DUM	01	R. Dumarey, R. Heindryckx, and R. Dams (1980) Determination of Mercury in Environmental Standard Reference Materials by Pyrolysis, Analytica Chimica Acta, 118: 381-383
80DUP	01	S. Dupire and M. Hoenig (1980) Influence des Matrices Complexes sur la Determination des Elements en Trace, Analusis, 8: 153-158.
80DYC	01	P. M. van Dyck and R. W. van Grieken (1980) Absorption Correction via Scattered Radiation in Energy Dispersive X-ray Fluorescence Analysis for Samples of Variable Composition and Thickness, Analytical Chemistry, 52: 1859-1864.
80EDD	01	B. T. Eddy, J. I. W. Watterson, and C. S. Erasmus (1980) Preparation of Synthetic Standards for use in Instrumental Neutron Activation Analysis, Geostandards Newsletter, 4: 229
80EPS	01	M. S. Epstein and J. D. Winefordner (1980) Precision and Linearity of Determinations at High Concentrations in Atomic Absorption Spectrometry with Horizontal Rotation of the Burner, Talanta, 27: 177-180.
80EPS	02	M. S. Epstein, J. Bradshaw, S. Bayer, J. Bower, E. Voigtman, and J. D. Winefordner (1980), Application of Laser-Excited Atomic Fluorescence Spectrometry to the Determination of Nickel and Tin, Applied Spectroscopy, 34: 372-376.
80EPS	03	M. S. Epstein, N. Omenetto, S. Nikdel, J. Bradshaw, and J. D. Winefordner (1980), Inductively Coupled Plasma as an Excitation Source for Flame Atomic Fluorescence Spectrometry Analytical Chemistry, 52: 284-287.
80EPS	04	M. S. Epstein, S. Bayer, J. Bradshaw, E. Voigtman, and J. Winefordner (1980), Application of Laser-excited Atomic Fluorescence Spectrometry to the Determination of Iron, Spectrochimica Acta, 358: 233-237.
80EVA	01	W. Evans, D. Dellar, B. Lucas, F. Jackson,and J. Read (1980) Observations on the Determination of Total Copper, Iron, Manganese, and Zinc in Foodstuffs by Flame Atomic Absorption Spectrophotometry, Analyst, 105: 529-543.
80FAA	01	A. Faanhof, H. A. Das, and J. Zonderhuis (1980) Possibilities of the Elemental Analysis of Dry Biological Material by Fast Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 56: 173-184.
80FLO	01	M. A. Floyd, V. A. Fassel, and A. P. D'Silva (1980) Computer-Controlled Scanning Monochrometer of the Determination of 50 Elements in Geochemical and Environmental Samples by Inductively Coupled Plasma-Atomic Emission Spectrometry, Analytical Chemistry, 52: 2168-2173.
80FUD	01	N. Fudagawa and A. Kawase (1980) Determination of Cobalt in Plant Materials by Graphite Furnace Atomic Absorption Spectrometry after Solvent Extraction, Bunseki Kagaku, 29: 6-11.
80GAL	02	M. Gallorini and E. Orvini (1980) The Role of Radiochemical Neutron Activation Analysis in Certifying Selected Trace Element Contents in Biological Related Matrices, in 80BRA 01, pp. 675-699.
80GAR	01	S. Garcia, W. Hensley, M. Minor, M. Denton, and M. Fuka (1980), An Automated Multidetector System for Instrumental Neutron Activation Analysis of Geological and Environmental Materials, Presented at the American Nuclear Society Meeting Puerto Rico.
80GER	01	M. Germani, I. Gokmen, A. Sigleo, G. Kowalczyk, I. Olmez, A. Small, D. Anderson, M. Failey, M. Gulovali, C. Choquette, E. Lepel, G. Gordon, and W. Zoller (1980), Concentrations of Elements in the National Bureau of Standards' Bituminous and Subbituminous Coal Standard Reference Materials, Analytical Chemistry, 52: 240-245.
80GIN	01	J. H. van Ginkel and J. Sinnaeve (1980) Determination of Total Nitrogen in Plant Material with Nessler's Reagent by Continuous-Flow Analysis, Analyst, 105: 1199-1203.
80GLA	01	E. Gladney, D. Perrin, W. Hensley, and M. Bunker (1980) Uranium Content of 25 Silicate Reference Materials, Geostandards Newsletter, 4: 243-246.
80GLA	03	E. S. Gladney, D. Perrin, J. Balagna, and C. Warner (1980) Evaluation of a Boron-Filtered Epithermal Neutron Irradiation Facility, Analytical Chemistry, 52: 2128-2132.
80GLA	04	E. S. Gladney, D. R. Perrin, and W. K. Hensley (1980) Determination of Uranium in NBS Biological Standard Reference Materials by Delayed Neutron Assay, Journal of Radioanalytical Chemistry, 59: 249-251.
80GRE	01	R. R. Greenberg (1980) Simultaneous Determination of Mercury and Cadmium in Biological Materials by Radiochemical Neutron Activation Analysis, Analytical Chemistry, 52: 676-679.
80GVA	01	I. Gvardjancic, L. Kosta, and M. Dermelj (1980) Determination of Iodine in Reference Materials by Activation Analysis, Journal of Radioanalytical Chemistry, 58: 359-365.
80HAA	01	W. J. Haas and V. A. Fassel (1980) Inductively Coupled Plasma Atomic Emission Spectroscopy, Elemental Analysis of Biological Materials, IAEA Technical Report series no. 197, pp. 167-199.
80HAN	01	R. Hanninen, J. Raisanen, and A. Anttila (1980) Elemental Analysis of Li and B with Proton Induced Gamma-ray Reactions, Radiochemical and Radioanalytical Letters, 44: 201-206.
80HEN	01	W. M. Henry and K. T. Knapp (1980) Compound Forms of Fossil Fuel Fly Ash Emissions, Environmental Science and Technology, 14: 450-456.
80HEY	01	K. Heydorn, E. Damsgaard, and B. Reitz (1980) Systematic Differences in the Determination of Vanadium in Standard Reference Material 1571 Orchard Leaves, Analytical Chemistry, 52: 1045-1049.

CODE	N	REFERENCE
80HIT	02	A. Hitchen and G. Zechanowitsch (1980) Chelatometric Determination of Calcium and Magnesium in Iron Ores, Slags, Anorthosite, Limestone, Cu-Ni-Pb-Zn Ores, and Divers Materials, Talanta, 27: 269-275.
80HOE	01	D. Hoede, J. Zonderhuis, and H. A. Das (1980) The Determination of Bromine in Dry Biological Material by Instrumental Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 56: 199-202.
80HON	01	P. K. Hon, W. W. Lau, W. C. Cheung, and M. C. Wong (1980) Atomic Absorption Spectrometric Determination of As, Bi, Pb, Sb, Se, and Sn with a Flame-Heated Silica T-Tube after Hydride Generation, Analytica Chimica Acta, 115: 355-359.
80IID	01	C. Iida, T. Uchida, and I. Kojima (1980) Decomposition of Bovine Liver in a Sealed Teflon Vessel for Determination of Metals by Atomic Absorption Spectrometry, Analytica Chimica Acta, 113: 365-368.
80IWA	01	Y. Iwata, K. Matsumoto, and K. Fuwa (1980) Determination of Chromium in Rocks and Sediments by Energy Dispersive X-ray Fluorescence Spectrometry: Evaluation of the Effectiveness of Internal Standards and Briquetting Samples, Bunseki Kagaku, 29: 640-644.
80JAC	01	F. J. Jackson, J. I. Read, and B. E. Lucas (1980) Determination of Total Chromium, Cobalt, and Silver in Foodstuffs by Flame Atomic Absorption Spectrophotometry, Analyst, 105: 359-370.
80JAR	01	J. O. Jarvisalo, J. Kilpio, and N.-E. L. Saris (1980) Toxicity of Cadmium to Renal Mitochondria when Administered in Vivo and in Vitro, Environmental Research, 22: 217-223.
80KAN	01	Y. Kanda, T. Oikawa, and T. Niwaguchi (1980) Multi-element Determination of Trace Elements in Glass by Instrumental Photon Activation Analysis, Analytica Chimica Acta, 121: 157-163.
80KAT	01	T. Kato and M. Kato (1980) Multielement Determination in Floor Sediments of the Japan Sea by Nondestructive Photon Activation Analysis, Journal of Radioanalytical Chemistry, 57: 105-112.
80KHA	02	S. R. Khalil, D. W. Koppenaal, and W. D. Ehmann (1980) Oxygen Concentrations in Coal and Fly Ash Standards, Analytical Letters, 13: 1063-1071.
80KIR	01	S. J. Kirchner, H. Oona, S. Perron, Q. Fernando, J. Lee, and H. Zeitlin (1980), Proton-Induced X-ray Emission Analysis of Deep-sea Ferromanganese Nodules, Analytical Chemistry, 52: 2195-2201.
80KNA	01	D. Knab and E. S. Gladney (1980) Determination of Selenium in Environmental Materials by Neutron Activation and Inorganic Ion Exchange, Analytical Chemistry, 52: 825-828.
80KOH	01	T.-S. Koh (1980) Microwave Drying of Biological Tissues for Trace Determination, Analytical Chemistry, 52: 1978-1979.
80KOP	01	D. W. Koppennal, R. Lett, F. Brown, and S. Manahan (1980) Determination of Ni, Cu, Se, Cd, Tl, and Pb in Coal Gassification Products by Isotope Dilution Spark Source Mass Spectrometry, Analytical Chemistry, 52: 44-49.
80KOR	01	V. Korunova and J. Dedina (1980) Determination of Trace Concentrations of Hg in Biological Materials after Digestion under Pressure in Nitric Acid Catalysed by Vanadium Pentoxide, Analyst, 105: 48-51.
80KOS	01	K. N. Kostadinov and R. G. Djingova (1980) Trace Element Investigation of Coal Samples by Thermal and Epithermal Neutron Activation Analysis, Radiochemical and Radioanalytical Letters, 45: 297-304.
80KOS	02	L. Kosta (1980) Reference Samples for Trace Elements in Biological Materials and Associated Analytical Problems, Elemental Analysis of Biological Materials: Current Problems and Techniques with Special Reference to Trace Elements, IAEA Technical Report series no. 197, Vienna, pp. 317-345.
80KUL	01	A. I. Kulathilake and A. Chatt (1980) Determination of Molybdenum in Sea and Estuarine Water with Beta-Naphthoin Oxime and Neutron Activation, Analytical Chemistry, 52: 828-833.
80KUM	01	J. Kumpulainen (1980) Determination of Chromium in Human Milk and Urine by Graphite Furnace Atomic Absorption Spectrometry, Analytica Chimica Acta, 113: 355-359.
80LAB	03	J. J. Labrecque and H. Schorin (1980) Analysis of the Major Constituents in Venezuelan Laterites: A Comparison of Atomic Absorption, X-ray Fluorescence, and Classical Methods, Applied Spectroscopy, 34: 39-43.
80LAK	01	E. L. Lakomaa (1980) Use of Neutron Activation Analysis in the Determination of Elements in Human Cerebrospinal Fluid, in 80BRA 01, p. 97.
80LAN	01	F. J. Langmyhr and U. Aadalen (1980) Direct Atomic Absorption Determination of Copper, Nickel, and Vanadium in Coal and Petroleum Coke, Analytica Chimica Acta, 115: 365-368.
80LAU	01	O. W. Lau and S. F. Cham (1980) Spectrophotometric Determination of Calcium with Chlorindazon C, Mikrochimica Acta (Wien), 1980I: 465-474.
80LEG	01	P. A. Legotte, W. C. Rosa, and D. C. Sutton (1980) Determination of Cadmium and Lead in Urine and Other Biological Samples by Graphite Furnace Atomic Absorption Spectrometry, Talanta, 27: 39-44.
80LON	01	B. Lonnerdal, M. Clegg, C. Keen, and L. Hurley (1980) Effects of Wet Ashing Techniques on the Determination of Trace Element Concentrations in Biological Samples, in 80BRA 01, pp. 619-629.
80MAE	01	W. Maenhaut, L. de Reu, H. van Rinsvelt, J. Cafmeyer, and P. van Espen (1980), Particle Induced X-ray Emission (PIXE) Analysis of Biological Materials: Precision, Accuracy, and Application to Cancer Tissues, Nuclear Instruments and Methods, 168: 557-562.
80MCC	01	J. McCormick (1980) Determination of Total Sulfur in Fuel Oils by Ion Chromatography, Analytica Chimica Acta, 121: 233-238.
80MIC	01	R. Michel, J. Hofmann, and J. Zilkens (1980) Trace Element Behaviour of Human and Mammalian Tissues During Excessive Supply of Metals, in 80BRA 01, p. 137.

CODE	N	REFERENCE
80NAD	01	R. A. Nadkarni (1980) Multitechnique Multielement Analysis of Coal and Fly Ash, Analytical Chemistry, 52: 929-935.
80NAK	01	S. Nakamura, N. Fudagawa, and A. Kawase (1980) Determination of Antimony in Plant Materials by Zeeman Atomic Absorption Spectrometry after Coprecipitation with Manganese Dioxide, Bunseki Kagaku, 29: 477-482.
80NEV	01	J. Neve, M. Hanocq, and L. Molle (1980) Critical Study of Some Wet Digestion Methods for Decomposition of Biological Materials for the Determination of Total Se and Se(VI), Mikrochimica Acta (Wien), 1980I: 259-269.
80NOR	01	L. de Norre, J. op de Beeck, and J. Hoste (1980) Determination of Fluorine in Zinc Ores using an Isotope Neutron Source Based Automated Neutron Activation Analysis System, Journal of Radioanalytical Chemistry, 59: 453-466.
80POL	01	J. E. Poldoski (1980) Determination of Pb and Cd in Fish and Clam Tissue by Atomic Absorption Spectrometry with a Mo and La Treated Pyrolytic Graphite Atomizer, Analytical Chemistry, 52: 1147-1151.
80PRE	01	J. R. Preer, H. Sekhon, B. Stephens, and M. Collins (1980) Factors Affecting Heavy Metal Content of Garden Vegetables, Environmental Pollution, 1: 95-104.
80RAP	01	S. E. Raptis, W. Wegscheider, G. Knapp, and G. Tolg (1980) X-ray Fluorescence Determination of Trace Selenium in Organic and Biological Matrices, Analytical Chemistry, 52: 1292-1296.
80RAP	02	S. Raptis, G. Knapp, A. Meyer, and G. Tolg (1980) Systematische Fehler bei der Selenbestimmung in NG/G-Bereich in Biologischen Matrices nach dem Hydrid-AAS-Verfahren, Fresenius Zeitschrift fur Analytische Chemie, 300: 18-21.
80RAP	03	S. Raptis, W. Wegscheider, G. Knapp, and G. Tolg (1980) X-ray Fluorescence Determination of Traces of Selenium in Organic and Biological Matrices, Fresenius Zeitschrift fur Analytische Chemie, 301: 103.
80RIL	01	G. H. Riley and M. J. Korsch (1980) Natural Reactor Studies, in Proceedings of the International Uranium Symposium on the Pine Creek Geosyncline, IAEA, Vienna, pp. 407-416.
80ROS	01	K. J. R. Rosman and J. R. de Laeter (1980) Mass Spectrometric Isotope Dilution Determination of Cadmium in Geochemical Reference Samples, Geostandards Newsletter, 4: 1-3.
80SAT	01	T. Sato and T. Kato (1980) Determination of Trace Elements in Subcellular Fractions of Liver and Kidney from Monkey by Thermal Neutron Activation Analysis, Radiochemical and Radioanalytical Letters, 42: 227-234.
80SCH	02	T. Schofield, E. Gladney, F. Miera, and P. Trujillo (1980) Comparative Determination of C, N, and H in Environmental Standard Reference Materials by Instrumental Conbustion Analysis and Thermal Neutron Capture Gamma-ray Spectrometry Analytical Letters, 13: 75-83.
80SCH	05	P. Schramel, A. Wolf, R. Seif, and B.-J. Klose (1980) Eine neue Apparatur zur Druckveraschung von Biologischem Material, Fresenius Zeitschrift fur Analytische Chemie, 302: 62-64.
80SCH	07	H. Schwenke and J. Knoth (1980) High-Sensitivity Multielement Trace Analysis using EDXRF Spectrometry with Multiple Total Reflection of the Exciting Beam, in 80BRA 01, pp. 307-317.
80SCH	08	P. Schramel, A. Wolf, and B. J. Klose (1980) Analytical Pretreatment of Biological Material by Wet Ashing Methods, in 80BRA 01, pp. 610-617.
80SEG	01	C. Segebade, H.-U. Fusban, and H.-P. Weise (1980) Analysis of some Toxic Components of Environmental Samples by High Energy Photon Activation, Journal of Radioanalytical Chemistry, 59: 399-405.
80SHI	01	T. Shigematsu and K. Kudo (1980) Substiochiometric Extraction of Chromium, Journal of Radioanalytical Chemistry, 59: 63-73.
80SLO	01	H. A. van der Sloot, G. Wals, C. Weers, and H. Das (1980) Simultaneous Elimination of Na-24, K-42, Br-82, and P-32 in the Determination of Trace Elements in Biological Materials by Neutron Activation Analysis, Analytical Chemistry, 52:112
80SMI	01	G. R. Smith (1980) Rapid Determination of Total Sulfur in Plants and Soils by Combustion Sulfur Analysis, Analytical Letters, A13: 465-471
80STO	02	T. R. Stolzenburg and A. W. Andren (1980) A Simple Acid Digestion Method for the Determination of Ten Elements in Ambient Aerosols by Flame Atomic Absorption Spectrometry, Analytica Chimica Acta, 118: 377-380.
80STU	01	O. Stulzaft, B. Maziere, and S. Ly (1980) Gallium Determination in Biological Samples, Journal of Radioanalytical Chemistry, 55: 291-295.
80SUZ	01	N. Suzuki, S. Nakamura, and H. Imura (1980) Substoichiometric Isotope Dilution Analysis of Iron in Biological Materials by the 8-Quinolinol Extraction, Journal of Radioanalytical Chemistry, 57: 37-46.
80SUZ	02	M. Suzuki, Y. Dokiya, S. Yamazaki, and S. Toda (1980) A New Type of Biological Reference Material for Multielement Analysis: The Fungus Penicillium Ochro-Chloron ATCC 36741, Analyst, 105: 944-949.
80SZY	01	F. J. Szydlowski, K. Monti, S. Michalak, and D. Dunmire (1980), A Practical Voltammetric Method for the Analysis of Lead in Cereal and Feed Products using a Tubular Hg Thin Film Electrode, Analytical Letters, A13: 529-542.
80TAM	01	G. K. H. Tam and G. LaCroix (1980) Determination of Arsenic in Urine and Feces by Dry Ashing, Atomic Absorption Spectrometry, International Journal of Environmental Analytical Chemistry, 8: 283-290.
80TON	01	S. L. Tong and W.-K. Leow (1980) Stationary Cold-Vapor Atomic Absorption Spectrometric Attachment for Determination of Total Mercury in Undigested Fish Samples, Analytical Chemistry, 52: 581-583.
80TOU	01	R. E. Tout and A. Chatt (1980) A Critical Evaluation of Short-Lived and Long-Lived Neutron Activation Products for Trace Element Determinations, Analytica Chimica Acta, 118: 341-358.
80UCH	01	T. Uchida, I. Kojima, and C. Iida (1980) Determination of Metals in Small Samples by Atomic Absorption and Emission Spectrometry with Discrete Nebulization, Analytica Chimica Acta, 116: 205-210.

CODE	N	REFERENCE
80URE	01	A. M. Ure, G. J. Ewen, and M. C. Mitchell (1980) A Three-channel Flame Atomic Absorption/Emission Spectrometer for the Rapid, Routine Determination of Major Cations in Soil Extracts and Plant Ash Solutions, Analytica Chimica Acta, 118: 1-9.
80VAL	01	M. T. G. Valentini, N. Genova, and R. Stella (1980) Determination of Cd, Cu, and Hg in Environmental Matrices by Destructive Neutron Activation Analysis, Radiochemical and Radioanalytical Letters, 44: 359-368.
80VER	01	J. Versieck, L. Vanballenberghe, G. Lemey, F. Barbier, R. Cornelis, and J. de Rudder (1980), Determination of Molybdenum in Serum, in 80BRA 01, pp. 273-282.
80VIJ	01	P. N. Vijan and D. Leung (1980) Reduction of Chemical Interference and Speciation Studies in the Hydride Generation-Atomic Absorption Method for Selenium, Analytica Chimica Acta, 120: 141-146.
80VIR	01	H. S. Virk (1980) Intercalibration of Glass Dosimeters for Neutron Fluence Determination, International Journal of Applied Radiation and Isotopes, 31: 649-651.
80WAL	01	W. J. Walker and R. H. Dowdy (1980) Elemental Composition of Barley and Ryegrass Grown on Acid Soils Amended with Scrubber Sludge, Journal of Environmental Quality, 9: 27-30.
80WAN	01	L. E. Wangen, E. S. Gladney, and W. K. Hensley (1980) Determination of Selenium in Environmental Standard Reference Materials by a Gamma-Gamma Coincidence Method using Ge(Li) Detectors, Analytical Chemistry, 52: 765-767.
80WHI	01	L. E. White and M. H. Carter (1980) Determination of Mercury in Rocks, Sediments, and Soils by Flameless Atomic Absorption, Oak Ridge Y-12 Plant report Y/DK-254, Oak Ridge, Tennessee.
80WOI	01	J. R. W. Woittiez and H. A. Das (1980) Multielement Analysis by Neutron Activation to Short-Lived Radionuclides with Previous Removal of Sodium: Application to Dry Biological Standard Materials, in 80BRA 01.
80YAM	01	M. Yamashita and N. Suzuki (1980) Photon Activation Analysis of Trace Metals in Biological Materials via Collection of Metal Tropolone-5-Sulfonate Complexes onto Anion-Exchange Resin, Journal of Radioanalytical Chemistry, 60: 73-85.
80YAN	01	K. Yanagi (1980) A New Procedure for Determining Arsenic in Natural Waters by means of Atomic Absorption Spectrophotometry combined with the Techniques of Arsine Evolution by Sodium Borohydride and of its Collection in a Trap of Liquid Nitrogen, Bunseki Kagaku, 29: 194-198.
81AHM	01	S. Ahmad, M. S. Chaudhary, and I. H. Qureshi (1981) Instrumental Neutron Activation Analysis of Obsidian Rock, Journal of Radioanalytical Chemistry, 67: 119-125.
81ALL	01	M. Allegini, K. W. Boyer, and J. T. Tanner (1981) Neutron Activation of Total Diet Food Composites for Iodine, Journal of the Association of Official Analytical Chemists, 64: 1111-1115.
81ARA	01	N. M. Arafat and W. A. Glooschenko (1981) Method for the Simultaneous Determination of As, Al, Fe, Zn, Cr, and Cu in Plant Tissue Without the Use of Perchloric Acid, Analyst, 106: 1174-1178.
81BAR	02	R. M. Barnes, editor (1981) Developments in Atomic Plasma Spectrochemical Analysis, Proceedings of the International Winter Conference, San Juan, Puerto Rico, Heyden, London.
81BER	01	S. S. Berman, J. W. McLaren, and D. S. Russel (1981) Application of the Inductively Coupled Plasma to the Analysis of Marine Samples, in 81BAR 02, pp. 586-600.
81BIS	01	K. M. Bisgard, J. Laursen, and B. S. Nielsen (1981) Energy-Dispersive XRF Spectrometry using Secondary Radiation in a Cartesian Geometry, X-ray Spectrometry, 10: 17-19.
81BLA	01	M. S. Black and R. F. Browner (1981) Volatile Metal-Chelate Sample Introduction for Inductively Coupled Plasma-Atomic Emission Spectrometry, Analytical Chemistry, 53: 249-253.
81BLA	02	M. S. Black, M. B. Thomas, and R. F. Browner (1981) Determination of Metal Chelates by Inductively Coupled Plasma Atomic Emission Spectrometry and Applications to Biological Materials, Analytical Chemistry, 53: 2224-2228.
81BLA	03	M. Blanusa and D. Breski (1981) Comparison of Dry and Wet Ashing Procedures for Cadmium and Iron Determination in Biological Material by Atomic Absorption Spectrophotometry, Talanta, 28: 681-684.
81BRO	01	P. J. Brooke and W. H. Evans (1981) Determination of Total Inorganic Arsenic in Fish, Shellfish, and Fish Products, Analyst, 106: 514-520.
81BYR	01	A. R. Byrne (1981) Determination of Palladium in Biological Samples by Neutron Activation Analysis, Mikrochimica Acta (Wien), 1981I: 323-329.
81CAN	01	A. Y. Cantillo (1981) Trace Element Deposition Histories in the Chesapeake Bay, Ph.D. Dissertation, University of Maryland, pp. 216-238.
81CAR	01	R. Carpenter and T. M. Beasley (1981) Plutonium and Americium in Anoxic Marine Sediments: Evidence Against Remobilization, Geochimica et Cosmochimica Acta, 45: 1917-1930.
81CAR	02	J. W. Carnahan, K. J. Mulligan, and J. A. Caruso (1981) Element-Selective Detection for Chromatography by Plasma Emission Spectrometry, Analytica Chimica Acta, 130: 227.
81CAS	01	V. Casella, C. Bishop, A. Glosby, and C. Phillips (1981) Anion Exchange Method for the Sequential Determination of Uranium, Thorium, and Lead-210 in Coal and Coal Ash, Journal of Radioanalytical Chemistry, 62: 257-266.
81CHA	01	C. L. Chakrabarti, C. Wan, H. Hamed, and P. Bertels (1981) Matrix Interferences in Graphite Furnace Atomic Absorption Spectrometry by Capacitive Discharge Heating, Analytical Chemistry, 53: 444-450.
81CHE	01	J. H. Chen and G. J. Wasserburg (1981) The Isotopic Composition of Uranium and Lead in Allende Inclusions and Meteoritic Phosphates, Earth and Planetary Science Letters, 52: 1-15.
81CHE	02	J. H. Chen and G. J. Wasserburg (1981) Isotopic Determination of Uranium in Picomole and Subpicomole Quantities, Analytical Chemistry, 53: 2060-2067.

CODE	N	REFERENCE
81CHR	01	L. H. Christensen and A. Agerbo (1981) Determination of Sulfur and Heavy Metals in Crude Oil and Petroleum Products by Energy-dispersive X-ray Fluorescence Spectrometry and Fundamental Parameter Approach, Analytical Chemistry, 53: 1788-1792.
81CHU	01	S. E. Church (1981) Multielement Analysis of Fifty-four Geochemical Reference Samples using Inductively Coupled Plasma Atomic Emission Spectrometry, Geostandards Newsletter, 5: 133-160.
81CLE	01	M. S. Clegg, C. Keen, B. Lonnderal, and L. Hurley (1981) Influence of Ashing Techniques on the Analysis of Trace Elements in Animal Tissue: I. Wet Ashing, Biological Trace Element Research, 3: 107-115.
81CLE	02	M. S. Clegg, C. Keen, B. Lonnderal, and L. Hurley (1981) Influence of Ashing Techniques on the Analysis of Trace Elements in Biological Samples: II. Dry Ashing, Biological Trace Element Research, 3: 237-244.
81COH	02	S. Cohen, S.-G. Chang, S. Markowitz, and T. Novakov (1981) Role of Fly Ash in Catalytic Oxidation of S(IV) Slurries, Environmental Science and Technology, 15: 1498-1502.
81COR	01	R. Cornelis, J. Versieck, A. Desmet, L. Mees, and L. Vanballenberghe (1981), Neutron Activation Analysis of the Trace Element Molybdenum in Urine of Healthy Persons, Bulletin des Societes Chimiques Belges, 90: 289-295.
81COR	02	R. Cornelis, J. Versieck, L. Meers, J. Hoste, and F. Barbier (1981), The Ultratrace Element Vanadium in Human Serum, Biological Trace Element Research, 3: 257-263.
81COX	01	D. H. Cox and A. E. Bibb (1981) Hydrogen Selenide Evolution-Electrothermal Atomic Absorption Method for Determining Nanogram Levels of Total Se, Journal of the Association of Official Analytical Chemists, 64: 265.
81DAN	01	L.-G. Danielsson, D. Jagner, M. Josefson, and S. Westerlund (1981), Computerized Potentiometric Stripping Analysis for the Determination of Cadmium, Lead, Copper, and Zinc in Biological Materials, Analytica Chimica Acta, 127: 147-156.
81DIL	01	S. Dilli (1981) Determination of Vanadium in Petroleum Crudes and Fuel Oils by Gas Chromatography, Analytica Chimica Acta, 128: 109-119.
81DOG	01	S. Dogan, G. Nembrini, and W. Haerdi (1981) A Novel Approach for Determination of Sn, Pb, and Cu in Biological Samples and Sediments by Alternating Current Anodic Stripping Voltammetry, Analytica Chimica Acta, 130: 385-390.
81EBD	01	L. Ebdon, J. R. Wilkinson, and K. W. Jackson (1981) Determination of Sub-nanogram Amounts of Mercury by Cold Vapor Atomic Fluorescence Spectrometry with an Improved Gas-sheathed Atom Cell, Analytica Chimica Acta, 128: 45-55.
81FAR	01	J. G. Farmer and M. J. Gibson (1981) Direct Determination of Cadmium, Chromium, Copper, and Lead in Siliceous Standard Reference Materials from a Fluoboric Acid Matrix by Graphite Furnace Atomic Absorption Spectrometry, Atomic Spectroscopy, 2: 176-178.
81FON	01	H. A. Foner and I. Gal (1981) Accurate Spectrophotometric Method for the Determination of Silica in Rocks, Minerals, and Related Materials, Analyst 106: 521-528.
81FRA	01	G. Frauerwieser (1981) Private Communication, Technical University of Vienna, Austria.
81GAL	01	M. Gallorini, E. Orvini, A. Rolla, and M. Burdisso (1981) Destructive Neutron Activation Analysis of Toxic Elements in Suspended Materials Released from Refuse Incinerators, Analyst, 106: 328-334.
81GAL	02	M. Gallorini, E. Orvini, A. Rolla, and M. Burdisso (1981) Radiochemical Neutron Activation Analysis of Trace Elements in Suspended Materials Released from Refuse Incinerators, Analytical Proceedings Published by the Royal Society of Chemistry (London), 18: 199-201.
81GLA	01	E. S. Gladney and D. Knab (1981) Determination of Selenium in Twenty Geological Reference Materials by Neutron Activation and Inorganic Ion Exchange, Geostandards Newsletter, 5: 67-69.
81GLA	02	E. S. Gladney and D. R. Perrin (1981) Instrumental Thermal Neutron Activation Determination of 20 Elements in Nineteen Silicate Reference Materials, Geostandards Newsletter, 5: 113-124.
81GLA	03	E. S. Gladney, J. Owens, T. Gunderson, and W. Goode (1981) Quality Assurance for Environmental Analytical Chemistry: 1976-1979, Los Alamos Scientific Laboratory report LA-8730-MS, pp. 113-118.
81GLA	04	E. S. Gladney, W. Goode, D. Perrin, and C. Burns (1981) Quality Assurance for Environmental Analytical Chemistry: 1980, Los Alamos National Laboratory report LA-8966-MS, pp. 108-114.
81GOO	01	R. T. Goodpasture, R. J. McElhaney, and R. Morrow (1981) Analysis of Botanical Samples for 25 Elements using an Automated Inductively Coupled Plasma Spectrometer, in 81BAR 02, pp. 697-705.
81GOU	01	P. D. Goulden, D. H. J. Anthony, and K. D. Austen (1981) Determination of Arsenic and Selenium in Water, Fish, and Sediments by Inductively Coupled Argon Plasma Emission Spectrometry, Analytical Chemistry, 53: 2027-2029.
81HAB	01	S. Habib and M. J. Minski (1981) Neutron Activation Technique for the Analysis of the Soluble and Particle Fractions of River Water, Journal of Radioanalytical Chemistry, 63: 379-395.
81HAH	01	M. H. Haha, R. Kuennen, J. Caruso, and F. Ficke (1981) Title Unknown, Journal of Agricultural and Food Chemistry, preprint.
81HAM	01	H. Hamaguchi (1981) Private Communication, taken from 81YAM 01.
81HAN	01	H.-B. Han, G. Kaiser, and G. Tolg (1981) Decomposition of Biological Materials, Rocks, and Soils in Pure Oxygen under Dynamic Conditions for the Determination of Se at Trace Levels, Analytica Chimica Acta, 128: 9-21.
81HIN	01	E. J. Hinderberger, M. Kaiser, and S. Koirtyohann (1981) Furnace Atomic Absorption Analysis of Biological Samples using the L'Vov Platform and Matrix Modification, Atomic Spectroscopy, 2: 1-7.
81HO	02	R. Ho (1981) Title Unknown, M.S. Thesis, University of Toronto; taken from 84LAN 02.

CODE N	REFERENCE
81HOR 01	J. J. Horvath, J. D. Bradshaw, J. N. Bower, M. S. Epstein, and J. D. Winefordner (1981), Comparison of Nebulizer-Burner Systems for Laser-Excited Atomic Fluorescence Flame Spectrometry, Analytical Chemistry, 53: 6-9.
81IMU 01	H. Imura and N. Suzuki (1981) Substoichiometric Isotope Dilution Analysis for Tin with Salicylideneamino-2-Thiophenol Complexation in Non-aqueous Medium, Talanta, 28: 73-79.
81INU 01	T. Inui, S. Tereda, and H. Tamura (1981) Determination of As by Arsine Generation with Reducing Tube Followed by Graphite Furnace Atomic Absorption Spectrometry, Fresenius Zeitschrift fur Analytische Chemie, 305: 189-192.
81JAC 01	K. W. Jackson, L. Ebdon, D. C. Webb, and A. G. Cox (1981) Determination of Lead in Vegetation by a Rapid Microsampling Cup Atomic Absorption Procedure with Solid Sample Introduction, Analytica Chimica Acta, 128: 67-74.
81JIN 01	S. Jingxin, T. Shude, W. Yuqi, C. Bingru, Q. Qinfang, and Z. Shen (1981), Determination of 28 Trace Elements in Soils from Mount Qomolangma Region by INAA, taken from 81MTA 01.
81KAH 01	H. L. Kahn, L. Cristiano, G. Dulude, and J. Sotera (1981) Automated Hydride Analysis, American Laboratory, 13(11): 136-144.
81KIB 01	T. Kiba (1981) Private Communication, in 81YAM 01.
81KIN 01	H. Kingston and P. A. Pella (1981) Preconcentration of Trace Metals in Environmental and Biological Samples by Cation Exchange Resin Filters for X-ray Spectrometry, Analytical Chemistry, 53: 223-227.
81KIT 01	K. Kitagawa, T. Nanya, and S. Tsuge (1981) Application of the Atomic Faraday Effect to the Trace Determination of Lead, Spectrochimica Acta, 368: 9-20.
81KNA 01	G. Knapp, S. Raptis, G. Kaiser, G. Tolg, P. Schramel, and B. Schreiber (1981), A Partially Mechanized System for the Combustion of Organic Samples in a Stream of Oxygen with Quantitative Recovery of the Trace Elements, Fresenius Zeitschrift fur Analytische Chemie, 308: 97-103.
81KOS 01	K. Kostadinov and R. Djingova (1981) Trace Element Analysis of Biological Materials by Thermal and Epithermal Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 63: 5-12.
81KRI 01	V. Krivan, H. Geiger, and H. E. Franz (1981) Bestimmung von Fe, Co, Cu, Zn, Se, Rb, und Cs in NBS-Ochsen-Leber Blutplasma und Erythrocyten durch INAA und AAS, Fresenius Zeitschrift fur Analytische Chemie, 305: 399-404.
81KUC 01	J. Kucera and J. J. M. de Goeij (1981) A Comparison of Two Separation Techniques using NaI(Tl) and Ge(Li) Spectrometry for Trace Element Determination in Biological Materials by Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 63: 23-40.
81KUL 01	I. Kuleff, R. Djingova, K. Kostadinov, and D. Todorovsky (1981), Instrumental Neutron Activation Analysis of Trace Elements in Quartz, Journal of Radioanalytical Chemistry, 62: 187-194.
81KUL 02	I. Kuleff and K. Kostadinov (1981) Epithermal Neutron Activation Analysis of Uranium by Neptunium-239 using High Resolution Gamma Spectrometry, Journal of Radioanalytical Chemistry, 63: 397-404.
81LAN 01	F. J. Langmyhr and I. M. Dahl (1981) Atomic Absorption Spectrometric Determination of Phosphorus in Biological Materials, Analytica Chimica Acta, 131: 303.
81LEE 01	S. W. Lee and J. C. Meranger (1981) Determination of Total Arsenic Species by Anodic Stripping Voltammetry, Analytical Chemistry, 53: 130-131.
81MAR 01	D. F. Marino and J. D. Ingle (1981) Ion Exchange Separation of Cobalt from Alkaline Earth and Selected Transition Metals with Lophine Chemiluminescence Detection, Analytical Chemistry, 53: 292-294.
81MER 03	R. W. Merefield and J. W. Runnels (1981) The Inductively Coupled Plasma: An Important and Versatile Analytical Tool for the Petroleum Industry, in 81BAR 02, pp. 396-403.
81MEY 01	A. Meyer, C. Hofer, G. Knapp, and G. Tolg (1981) Selenbestimmung in UG/G and NG/G Bereich im Anorganischen und Organischen Matrices nach Verdampfungsanlyse in Dynamischen System durch AAS, Frenesius Zeitschrift fur Analytische Chemie, 305: 1-10.
81MIZ 01	A. Mizuike and A. Iino (1981) Surface Treatment of Borosilicate Glass Beakers for Prevention of Sodium Contamination, Analytica Chimica Acta, 124: 427-430.
81MOH 01	N. Mohamed and R. C. Fry (1981) Slurry Atomization Direct Atomic Spectrochemical Analysis of Animal Tissue, Analytical Chemistry, 53: 450-455.
81MOL 01	A. Molokhia and A. Dyer (1981) Simultaneous Determination of Eight Trace Elements in Human Skin by Instrumental Neutron Activation Analysis, Analyst, 106: 1168-1173.
81MTA 01	Modern Trends in Activation Analysis (1981) Abstracts, Sixth International Conference, University of Toronto, Canada.
81MUN 01	R. C. Munter and R. A. Grande (1981) Plant Tissue and Soil Extract Analysis by ICP-Atomic Emission Spectrometry, in 81BAR 02, pp. 653-672.
81NAD 01	R. A. Nadkarni (1981) Determination of Volatile Elements in Coal and Other Organic Materials by Oxygen Bomb Combustion, American Laboratory, 13(8): 22-29.
81NAR 01	H. Narasaki (1981) Determination of Trace Hg in Milk Products and Plastics by Combustion in an Oxygen Bomb and Cold-vapor Atomic Absorption Spectrometry, Analytica Chimica Acta, 125: 187-191.
81NEU 01	D. R. Neuman and F. F. Munshower (1981) Rapid Determination of Molybdenum in Botanical Material by Electrothermal Atomic Absorption Spectrometry, Analytica Chimica Acta, 123: 325-328.
81NIS 01	Y. Nishikawa (1981) Private Communication, in 81YAM 01.
81NON 01	N. Nonaka, H. Higuchi, H. Hamaguchi, and K. Tomura (1981) Losses of the Elements during Dry Ashing of Plant Materials, Bunseki Kagaku, 30: 599-604.

CODE N REFERENCE

81OGU 01 K. Oguma and R. Kuroda (1981)
Dry-column Chromatography of Uranium: Application to Chemical Analysis of Monazite and Phosphate Rock for Uranium Mikrochimica Acta (Wien), 1981II: 57-67.

81OHT 01 A. Ohta, T. Matsubayashi, and M. Itoman (1981)
Energy-Dispersive XRF Spectrometric Determination of Phosphorus, Calcium, Iron, Zinc, and Strontium in Human Bones, Advances in X-ray Chemical Analysis in Japan, 12: 73.

81OWE 01 J. W. Owens (1981)
Private Communication, Environmental Surveillance Group, Los Alamos National Laboratory, Los Alamos, New Mexico.

81PAH 01 B. Pahlananpour, M. Thompson, and L. Thorne (1981)
Simultaneous Determination of Trace Amounts of As, Sb, and Bi in Herbage by Hydride Generation and ICP Atomic Emission Spectrometry, Analyst, 106: 467-471.

81PAR 01 P. P. Parekh (1981)
Energy-dispersive X-ray Fluorescence Analysis of Organic-rich Soils and Sediments, Radiochemical and Radioanalytical Letters, 50: 1-14.

81PIC 01 C. J. Pickford (1981)
Determination of Arsenic by Emission Spectrometry using an Inductively Coupled Plasma Source and the Syringe Hydride Technique, Analyst, 106: 464-467.

81PIH 01 B. Pihlar, P. Valenta, and H. W. Nurnberg (1981)
New High-Performance Analytical Procedure for the Voltammetric Determination of Nickel in Routine Analysis of Waters, Biological Materials, and Food, Fresenius Zeitschrift fur Analytische Chemie, 307: 337-346.

81POS 01 R. S. Posey and R. W. Andrews (1981)
Determination of Se(IV) by Anodic Stripping Voltammetry with an In-situ Gold-Plated Rotating Glassy Carbon Disk Electrode, Analytica Chimica Acta, 124: 107-112.

81RAP 01 S. E. Raptis, W. Wegscheider, and G. Knapp (1981)
The Determination of Arsenic at NG/G and PPM Levels in Organic and Biological Matrices, Mikrochimica Acta (Wien), 1981I: 93-97.

81REA 01 D. C. Reamer and C. Veillon (1981)
Preparation of Biological Materials for Determination of Selenium by Hydride Generation-Atomic Absorption Spectrometry, Analytical Chemistry, 53: 1192-1195.

81REA 02 D. C. Reamer and C. Veillon (1981)
Determination of Selenium in Biological Materials by Stable Isotope Dilution Gas Chromatography - Mass Spectrometry, Analytical Chemistry, 53: 2166-2169.

81REE 01 J. Reednick (1981)
Spectroscopie Atomique: Excitation d'un Plasma de Haute Energie et Spectrometrie de Resolution Elevee, Analusis, 9: 14-20.

81REL 01 R. E. Relm and D. D. Hawn (1981)
Determination of Total Sulfur in Hydrocarbons by Reductive Pyrolysis with Polarographic Detection, Analytical Chemistry 53: 1088-1093.

81ROB 02 G. Robaye, G. Weber, J. Delbrouck, I. Roelandts, P. Bartsch, and A. Collignon (1981), Attempts to Improve PIXE Quantitative Trace Element Analysis of Biomedical Materials, Nuclear Instruments and Methods, 181: 59-62.

CODE N REFERENCE

81SAI 01 S. O. Saied, D. Crumpton, and P. E. Francios (1981)
The Validation of a PIXE System for Trace Element Analysis of Biological Samples, Nuclear Instruments and Methods, 181: 53-57.

81SAS 01 C. S. Sastri, R. Caletka, and V. Krivan (1981)
Simultaneous Determination of Boron and Lithium by Charged Particle Activation Analysis, Analytical Chemistry, 53: 765.

81SAS 02 C. S. Sastri, R. Caletka, and V. Krivan (1981)
Analysis of Refractory Metals for Lithium, Boron, and Nitrogen by Charged Particle Activation Yielding Be-7 as the Indicator Radionuclide, taken from 81MTA 01.

81SEG 01 C. Segebade and H.-U. Fusban (1981)
Uranium Analysis by Activation with 30 MeV Bremsstrahlung, Radiochemical and Radioanalytical Letters, 48: 311-328.

81SHA 01 P. G. Shaw, D. McKown, and S. E. Manahan (1981)
Trace Element Determinations in Shale Oil Products by Neutron Activation, Analytica Chimica Acta, 123: 65-74.

81SHI 01 T. Shigematsu and K. Kudo (1981)
Substoichiometric Determination of Phosphorus, Journal of Radioanalytical Chemistry, 67: 307-319.

81SLO 01 H. van der Sloot, K. Hoede, T. Klinkers, and H. Das (1981)
The Determination of Arsenic, Selenium, and Antimony in Rocks, Sediments, Fly Ash, and Slag, in 81MTA 01.

81STR 01 W. B. Stroube, W. C. Cunningham, and M. Allegrini (1981)
Activation Analysis Program of the USFDA at the NBSR, in NBS Reactor: Summary of Activities July 1979 to June 1980, NBS Technical Note 1142, pp. 186-188.

81SUZ 01 S. Suzuki, S. Hirai, and K. Noda (1981)
Determination of Selenium in Herb Plants by Neutron Activation Analysis using a Coincidence Counting Method, Bunseki Kagaku, 31: 67-71.

81SZY 01 F. Szydlowski, D. Dunmire, E. Peck, R. Eggers, and W. Matson (1981), Simultaneous Determination of Fe(II), Fe(III), and Total Iron in Sphagnum Moss Peat by Programmable Voltammetry on a Graphite Tubular Electrode, Analytical Chemistry, 53: 193-196.

81TAN 01 K. Tanabe, K. Chiba, H. Haraguchi, and K. Fuwa (1981)
Determination of Mercury at the Ultratrace Level by Atmospheric Pressure Helium Microwave-Induced Plasma Emission Spectrometry, Analytical Chemistry, 53: 1450-1453.

81TOE 01 K. Toei and Y. Shimoishi (1981)
Determination of Ultramicro Amounts of Selenium by Gas Chromatography with Electron-Capture Detection, Talanta, 28: 967-972.

81TUR 01 K. E. Turner (1981)
Private Communication, Bhp. Central Research Laboratories, Shortland, Australia.

81UCH 01 T. Uchida, I. Kojima, and C. Iida (1981)
Application of an Automatically Triggered Digital Integrator to Flame Atomic Absorption Spectrometry of Copper using a Discrete Nebulisation Technique, Analyst, 106: 206-212.

81UCH 02 H. Uchida, Y. Shimoishi, and K. Toei (1981)
Rapid Determination of Trace Amounts of Selenium in Biological Samples by Gas Chromatography with Electron Capture Detection, Analyst, 106: 757-762.

CODE	N	REFERENCE
81UTH	01	E. Uthus, M. Collings, W. Cornatzer, and F. Nielsen (1981) Determination of Total Arsenic in Biological Samples by Arsine Generation and Atomic Absorption Spectrometry, Analytical Chemistry, 53: 2221-2224.
81VER	02	A. Verbueken, E. Michiels, and R. van Grieken (1981) Total Analysis of Plant Material and Biological Tissue by Spark Source Mass Spectrometry, Fresenius Zeitschrift fur Analytische Chemie, 309: 300-304.
81WAL	01	G. F. Wallace (1981) Application of a Sequential Scanning ICP to the Analysis of Geological Materials, Atomic Spectrometry, 2: 87-90.
81WAL	02	G. F. Wallace and R. D. Ediger (1981) Optimization of ICP Operating Conditions for the Determination of Sulfur in Oils, Atomic Spectrometry, 2: 169-172.
81WAN	01	L. E. Wangen (1981) Relationships Between the Elemental Composition and Particle Sizes of Aerosols With and Without Impact from a Coal-fired Power Plant, Los Alamos Scientific Laboratory report LA-8759-MS.
81WEI	01	A. D. Weiss, R. N. Savage, and G. M. Hieftje (1981) Development and Characterization of a 9-mm Inductively Coupled Argon Plasma Source for Atomic Emission Spectrometry Analytica Chimica Acta, 124: 245-258.
81WIL	01	R. E. Williams, P. K. Hopke, and R. A. Meyer (1981) Trace Multielement Analysis using High-flux Fast-neutron Activation, Journal of Radioanalytical Chemistry, 63: 187.
81WIL	02	R. E. Williams (1981) Gamma-ray Spectrometry Following High-flux 14-MeV Neutron Activation, Ph.D. Thesis, University of Illinois, and Lawrence Livermore Laboratory report UCRL-53208.
81WOL	01	K. Wolnik, F. Fricke, M. Hahn, and J. Caruso (1981) Sample Introduction System for Simultaneous Determination of Volatile Elemental Hydrides and other Elements in Foods by Inductively Coupled Argon Plasma Emission Spectrometry, Analytical Chemistry, 53: 1030-1035.
81WOL	02	K. A. Wolnik, R. W. Kuennen, and F. L. Fricke (1981) Determination of Toxic and Nutritional Elements in Raw Agricultural Crops using ICAP Spectroscopy, in 81BAR 02, pp. 685-696.
81YAM	01	M. Yamamoto, T. Shohjii, T. Kamumaru, and Y. Yamamoto (1981) Masking Effect of KI on the Interferences in the Atomic Absorption Spectrometric Determination of Sb utilizing Stibine Generation by Sodium Borohydride Tablet Reduction, Fresenius Zeitschrift fur Analytische Chemie, 305: 11-14.
81YAN	01	K. Yanagi and M. Ambe (1981) Determination of Arsenic in Biological, Environmental, and Geological Materials by Arsine Evolution Flameless Atomic Absorption Spectrophotometry, Bunseki Kagaku, 30: 209-214.
81YAS	01	A. Yasui, H. Koizumi, and C. Tsutsumi (1981) Determination of Calcium in Food Samples: Application of Adding Interference Suppressing Reagent-Atomic Absorption Spectrophotometric Method, Bunseki Kagaku, 30: 165-171.
81YUZ	01	M. Yuzawa and N. Suzuki (1981) Substoichiometric Isotope Dilution Analysis of Calcium in Biological Material, Journal of Radioanalytical Chemistry, 62: 115-124.
81ZAU	01	G.-P. Zauke (1981) Cadmium in Gammaridae (Amphipoda:Crustacea) of the Rivers Werra and Weser: Geographical Variation and Correlation to Cadmium in Sediments, Environmental Pollution, 2: 465-474.
82AKA	01	J. Akashi, I. Fukushima, A. Imahori, and S. Shiobara (1982) Multielement Analysis of the Hair of Mining Industry Workers Journal of Radioanalytical Chemistry, 68: 59-65.
82ANO	01	Anonymous (1982) Elemental Analysis: Model 240C Elemental Analyzer, Perkin-Elmer Corporation, Norwalk, Conn.
82ATS	01	I. Atsuya and K. Itoh (1982) Direct Determination of Cadmium in the NBS Bovine Liver by Zeeman Atomic Absorption Spectrometry using the Graphite Miniature-cup, Bunseki Kagaku, 31: 713-717.
82ATS	02	I. Atsuya and K. Itoh (1982) Direct Determination of Lead in the NBS Bovine Liver by Zeeman Atomic Absorption Spectrometry using the Graphite Miniature-cup, Bunseki Kagaku, 31: 708-712.
82AZI	01	A. Aziz, J. A. C. Broekaert, and F. Leis (1982) Analysis of Microamounts of Biological Samples by Evaporation in a Graphite Furnace and Inductively Coupled Plasma Atomic Emission Spectroscopy, Spectrochimica Acta, 37B: 369-379.
82AZI	02	A. Aziz, J. A. C. Broekaert, and F. Leis (1982) A Contribution to the Analysis of Microamounts of Biological Samples using a Combination of Graphite Furnace and Microwave Induced Plasma Atomic Emission Spectroscopy, Spectrochimica Acta, 37B: 381-389.
82BAR	01	U. Bartels and T. T. Pham (1982) Spectrophotometric Determination of Sulphur in Plants using Schoniger Conbustion and Dimethylsulphonazo III, Fresenius Zeitschrift fur Analytische Chemie, 310: 13-15.
82BEN	01	H. Benard and M. Pinta (1982) Determination of Arsenic in Atmospheric Aerosols by Atomic Absorption with Electrothermal Atomization, Atomic Spectroscopy, 3: 8-12.
82BYR	01	A. R. Byrne (1982) Simultaneous Radiochemical Neutron Activation Analysis of Vanadium, Molybdenum, and Arsenic in Biological Samples, Radiochemical and Radioanalytical Letters, 52: 99-110.
82CAL	01	G. Calderoni and T. Ferri (1982) Determination of Tl at Subtrace Level in Rocks and Minerals by Coupling Differential Pulse Anodic Stripping Voltammetry with Suitable Enrichment Methods, Talanta, 29: 371-375.
82CHA	01	J. F. Chapman and L. S. Dale (1982) The Use of Alkaline Permanganate in the Preparation of Biological Materials for the Determination of Hg by Atomic Absorption Spectrometry, Analytica Chimica Acta, 134: 379.
82CHR	01	J. K. Christensen, L. Kryger, and N. Pind (1982) The Determination of Traces of Cadmium, Lead, and Thallium in Fly Ash by Potentiometric Stripping Analysis, Analytica Chimica Acta, 141: 131-146.
82CLE	01	M. S. Clegg, C. Keen, B. Lonnerdal, and L. Hurley (1982) Analysis of Trace Elements in Animal Tissue: Determination of Manganese by Graphite Furnace Atomic Absorption Spectrophotometry, Biological Trace Element Research, 4: 145-156.

CODE	N	REFERENCE
82COH	01	I. M. Cohen, S. M. Resnizky, and G. B. Baro (1982) Activation Analysis of Thallium by Tl-203(n,2n)Tl-202 Reaction in Nuclear Reactors, Journal of Radioanalytical Chemistry, 72: 451-461.
82CON	01	C. P. Conrad, M. W. Rowe, and E. S. Gladney (1982) Comparative Determination of Uranium in Silicates by Delayed Neutron Activation Analysis, Geostandards Newsletter, 6: 1-4.
82COR	01	E. Cortes, N. Gras, L. Munoz, and V. Cassorla (1982) A Study of Some Trace Elements in Infant Foods, Journal of Radioanalytical Chemistry, 69: 401-415.
82CRO	01	J. G. Crock and F. E. Lichte (1982) Determination of Rare Earth Elements in Geological Materials by Inductively Coupled Argon Plasma/Atomic Emission Spectrometry, Analytical Chemistry, 54: 1329-1332.
82CRO	03	J. G. Crock and F. E. Lichte (1982) An Improved Method for the Determination of Trace Levels of Arsenic and Antimony in Geological Materials by Automated Hydride Generation Atomic Absorption Spectroscopy, Analytica Chimica Acta, 144: 223-233.
82CUR	01	D. B. Curtis (1982) Private Communication, Group INC-7, Los Alamos National Laboratory, New Mexico.
82DAK	01	T. Dakabu and M. D. Swaine (1982) Calcium and Potassium Levels in Leaves Measured by X-ray Fluorescence Analysis, International Journal of Applied Radiation and Isotopes, 33: 193-196.
82DAM	01	E. Damsgaard, K. Ostergaard, and K. Heydorn (1982) Concentrations of Selenium and Zinc in Human Kidneys, Journal of Radioanalytical Chemistry, 70: 67-76.
82DEM	01	D. R. Demers, D. A. Busch, and C. D. Allemand (1982) ICP Atomic Fluorescence Spectroscopy, American Laboratory, 14 (3): 167.
82DOO	01	K. J. Doolan (1982) The Determination of Traces of Mercury in Solid Fuels by High Temperature Combustion and Cold-vapor Atomic Absorption Spectrometry, Analytica Chimica Acta, 140: 187-195.
82EBD	01	L. Ebdon, J. R. Wilkinson, and K. W. Jackson (1982) Determination of Mercury in Coal by Non-oxidative Pyrolysis and Cold Vapor Atomic-Fluorescence Spectrometry, Analyst, 107: 269-275.
82EBD	02	L. Ebdon and W. C. Pearce (1982) Direct Determination of Arsenic in Coal by Atomic Absorption Spectroscopy using Solid Sampling and Electrothermal Atomization, Analyst, 107: 942-950.
82EHM	01	W. D. Ehmann, W. R. Markesbery, and T. M. Hossain (1982) Trace Elements in Human Brain Tissue by INAA, Journal of Radioanalytical Chemistry, 70: 57-65.
82ELS	02	C. M. Elson, J. Milley, and A. Chatt (1982) Determination of Arsenic and Antimony in Geological Material and Natural Waters by Coprecipitation with Selenium and Neutron Activation-Gamma Spectrometry, Analytica Chimica Acta, 142: 269-275.
82EVA	01	W. H. Evans and D. Dellar (1982) Evaluation of an Inductively Coupled Plasma Emission Direct-Reading Spectrometer for Multiple Trace Element Analysis of Foodstuffs, Analyst, 107: 977-992.
82FLA	01	F. J. Flanagan, R. Moore, and P. J. Aruscavage (1982) Mercury in Geological Samples, Geostandards Newsletter, 6: 25-46.
82GAJ	01	R. J. Gajan, S. Capar, C. Subjoc, and M. Sanders (1982) Determination of Lead and Cadmium in Foods by Anodic Stripping Voltammetry: I. Development of Method, Journal of the Association of Official Analytical Chemists, 65: 970.
82GLA	02	E. S. Gladney, D. Perrin, C. Burns, and R. Robinson (1982) Quality Assurance for Environmental Analytical Chemistry: 1981, Los Alamos National Laboratory report LA-9579-MS.
82GOL	01	J. Goldberg and R. Sacks (1982) Direct Determination of Metallic Elements in Solid, Powder Samples with Electrically Vaporized Thin Film Atomic Emission Spectrometry, Analytical Chemistry, 54: 2179-2186.
82GRA	01	C. Graham, M. Glascock, J. Carni, J. Vogt, and T. Spalding (1982), Determination of Elements in National Bureau of Standards' Geological Standard Reference Materials by Neutron Activation Analysis, Analytical Chemistry, 54: 1623.
82GRE	03	R. R. Greenberg and H. M. Kingston (1982) Simultaneous Determination of Twelve Trace Elements in Estuarine and Sea Water using Pre-irradiation Chromatography, Journal of Radioanalytical Chemistry, 71: 147-167.
82GRI	01	A. P. Grimanis and G. D. Kanias (1982) Rapid Determination of Mercury in Biological Materials by Radiochemical Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 72: 587-595.
82GRO	01	Z. Grobenski, R. Lehmann, R. Tamm, and B. Welz (1982) Improvements in Graphite Furnace Atomic Absorption Microanalysis with Solid Sampling, Mikrochimica Acta (Wien), 1982I: 115-125.
82GUP	02	J. G. Sen Gupta (1982) Flame and Graphite Furnace Atomic Absorption and Optical Emission Spectroscopic Determination of Yttrium and the Rare Earth Contents of Sixteen International Reference Samples of Rocks and Coal, Geostandards Newsletter, 6: 241.
82HAD	01	I. Hadzistelios and C. Papadopoulou (1982) Radiochemical Determination of Molybdenum in Biological Tissues by Ion Exchange, Journal of Radioanalytical Chemistry, 72: 597-607.
82HAH	01	M. H. Hahn, K. Wolnik, F. Fricke, and J. Caruso (1982) Hydride Generation/Condensation System with an Inductively Coupled Argon Plasma Polychromator for Determination of Arsenic, Bismuth, Germanium, Antimony, Selenium, and Tin in Foods, Analytical Chemistry, 54: 1048-1052.
82HAM	01	E. P. Hamilton and A. Chatt (1982) Determination of Trace Elements in Atmospheric Wet Precipitation by Instrumental Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 71: 29-45.
82HAR	01	J. M. Harnly, J. S. Kane, and N. J. Miller-Ihli (1982) Effects of Air-Acetylene Flame Parameters on Simultaneous Multielement Atomic Absorption Spectrometry, Applied Spectroscopy, 36: 637-643.
82HEI	01	H. Heinrichs and H. Keltsch (1982) Determination of Arsenic, Bismuth, Cadmium, Selenium, and Thallium by Atomic Absorption with a Volatilization Technique, Analytical Chemistry, 54: 1211-1214.

CODE N	REFERENCE
82HEY 02	K. Heydorn and E. Damsgaard (1982) Evaluation of Botanical Reference Materials for the Determination of Vanadium in Biological Samples, Journal of Radioanalytical Chemistry, 69: 131-146.
82HOE 01	M. Hoenig, C. Lima, and S. Dupire (1982) Validite des Determinations par Spectrometrie D'Absorption Atomique avec Atomisation Electrothermique du Cadmium, Cobalt, Chrome, Nickel et Plomb, Analusis, 10: 132-139.
82HOE 02	M. Hoenig and P. van Hoeyweghen (1982) Application de la SAA Electrothermique a L'Analyse des Matrices Complexes: Cas de L'Arsenic dans les Vegetaux Spectrochimica Acta, 37B: 817-828.
82INU 01	T. Inui, S. Terada, H. Tamura, and N. Ichinose (1982) Determination of Se by Hydride Generation with Reducing Tube Followed by Graphite Furnace Atomic Absorption Spectrometry, Fresenius Zeitschrift fur Analytische Chemie, 311: 492-495.
82JAG 01	D. Jagner and K. Aren (1982) Flow Potentiometric Stripping Analysis for Mercury(II) in Urine, Sediment, and Acid Digest of Biological Material, Analytica Chimica Acta, 141: 157-162.
82JEN 01	D. R. Jenke and F. E. Diebold (1982) Characterization of Phosphorite Ores, Analytical Chemistry, 54: 1008-1011.
82JEN 02	D. R. Jenke and R. Woodriff (1982) Application of the Woodriff Constant Temperature Graphite Furnace Atomizer to Atomic Spectroscopy, American Laboratory 14(8): 14-26.
82JEN 03	C. D. Jennings and T. M. Beasley (1982) Radiochemical Determination of Co-60 in Environmental Samples, Talanta, 29: 871-873.
82JEN 05	D. R. Jenke and R. Woodriff (1982) Simultaneous Emission/Absorption Analysis in Constant Temperature Furnace Atomic Spectroscopy, Applied Spectroscopy, 36: 686-689.
82JER 01	R. E. Jervis, K.-L. Ho, and B. Tiefenbach (1982) Trace Impurities in Canadian Oil-Sands, Coals, and Petroleum Products and Their Fate during Extraction, Up-Grading, and Combustion, Journal of Radioanalytical Chemistry, 71: 225.
82JON 01	J. W. Jones, S. G. Capar, and T. C. O'Haver (1982) Critical Evaluation of a Multielement Scheme using Plasma Emission and Hydride Evolution Atomic Absorption Spectrometry for the Analysis of Plant and Animal Tissues, Analyst, 107: 353-377.
82JUL 01	K. Julshamn, O. Ringdal, K. Slinning, and O. Braekkan (1982) Optimization of the Determination of Selenium in Marine Samples by Atomic Absorption Spectrometry: Comparison of a Flameless Graphite Furnace Absorption System with a Hydride Generation Atomic Absorption System, Spectrochimica Acta, 37B: 473-482.
82KAM 01	E. Kamata, R. Nakashima, K. Goto, and S. Shibata (1982) Determination of Twelve Elements Including Major and Trace Elements in Coal with Flame Atomic Absorption Spectrometry, Bunseki Kagaku, 31: 551-556.
82KEE 01	J. A. Keenan and D. Holmes (1982) Quantitative Trace Analysis by X-ray Fluorescence using the Computer Program NRLXRF, Applied Spectroscopy, 36: 19-22.
82KIM 01	T. Kimura, T. Ishimori, and T. Hamada (1982) Removal of Na-24 by a Chromatographic Extraction with a Kieselguhr Column and a Crown Ether Solution, Analytical Chemistry, 54: 1129-1131.
82KIR 01	T. Kiriyama and R. Kuroda (1982) Combined Ion Exchange-Spectrophotometric Method for the Simultaneous Determination of Vanadium and Cobalt in Biological Materials, Analyst, 107: 505-510.
82KIR 02	T. Kiriyama and R. Kuroda (1982) Ion-Exchange Separation and Spectrophotometric Determination of Titanium in Biological Materials, Fresenius Zeitschrift fur Analytische Chemie, 313: 328-330.
82KIS 01	E. Kiss (1982) Determination of Silica in Geological Materials by Atomic Absorption Spectrometry, Analytica Chimica Acta, 140: 197.
82KOI 01	S. R. Koirtyohann, M. Kaiser, and E. Hinderberger (1982) Food Analysis for Lead using Furnace Atomic Absorption and a L'Vov Platform, Journal of the Association of Official Analytical Chemists, 65: 999-1003.
82KRA 01	M. Kralik (1982) Rb-Sr Age Determinations of Precambrian Carbonate Rocks of the Carpentarian McArthur Basin, Northern Territories, Australia, Precambrian Research, 18: 157-170.
82KRI 01	V. Krivan and M. Lang (1982) Radiotraceruntersuchungen zur Direkten Bestimmung von Kupfer in Biologischen Matrices durch Flammenlose AAS, Fresenius Zeitschrift fur Analytische Chemie, 312: 324-330.
82KUE 01	R. W. Kuennen, D. A. Wolnik, F. Fricke, and J. Caruso (1982) Pressure Dissolution and Real Sample Matrix Calibration for Multielement Analysis of Raw Agricultural Crops by Inductively Coupled Plasma Atomic Emission Spectrometry, Analytical Chemistry, 54: 2146-2150.
82KUE 03	R. W. Kuennen, M. Hahn, F. Fricke, and K. Wolnik (1982) Hydride Generation and Condensation Flame Atomic Absorption Spectroscopic Determination of Antimony in Raw Coffee Beans and Processed Coffee, Journal of the Association of Official Analytical Chemists, 65: 1146-1148.
82LAS 01	B. D. Lass, N. G. Roche, and A. O. Sanni (1982) Heavy Ion Activation Analysis, Journal of Radioanalytical Chemistry, 70: 251-272.
82LAU 01	J. C. Laul, E. A. Lepel, W. C. Weimer, and N. Wogman (1982) Precise Trace Rare Earth Analysis by Radiochemical Neutron Activation, Journal of Radioanalytical Chemistry, 69: 181.
82LEO 03	L. Leoni, M. Minichini, and M. Saitta (1982) Determination of Sulfur, Chlorine, and Fluorine in Silicate Rocks by X-ray Fluorescence Analysis, X-ray Spectrometry, 11: 156-158.
82LEU 01	P. C. Leung, K. S. Subramanian, and J. Meranger (1982) Determination of Arsenic in Polluted Waters by Differential Pulse Anodic Stripping Voltammetry, Talanta, 29: 515-518.
82LIA 01	C. Liao (1982) Tellurium as Catalyst in Semimicro Kjeldahl Method for Total Nitrogen Determination, Journal of the Association of Official Analytical Chemists, 65: 786-790.

CODE N REFERENCE

82LIN 01 S. M. Lin, C. H. Chiang, C. L. Tseng, and M. H. Yang (1982) Determination of Mercury Contents in Head Hair of Dentists by Instrumental Neutron Activation Analysis, Radiochemical and Radioanalytical Letters, 56: 261-272.

82LIN 03 P. C. Lindalh and A. M. Bishop (1982) Determination of Trace Elements in Coal by an Oxygen Bomb Combusiton/Atomic Absorption Spectrophotometric Method, Fuel, 61: 658-662.

82LO 01 J. M. Lo, J. C. Wei, M. H. Yang, and S. J. Yeh (1982) Preconcentration of Hg with Lead Diethyldithiocarbamate for Neutron Activation Analysis of Biological and Environmental Samples, Journal of Radioanalytical Chemistry, 72: 571-585.

82LYO 01 D. J. Lyons and R. L. Roofayel (1982) Determination of Molybdenum in Plant Material using Inductively Coupled Plasma Emission Spectroscopy, Analyst, 107: 331-334.

82MAT 01 K. Matsumoto and K. Fuwa (1982) Molecular Emission Spectrometry with Hydride Generation for Determination of Subnanogram Amounts of Arsenic, Analytical Chemistry, 54: 2012-2015.

82MAT 02 K. Matsumoto, M. Nishio, Y. Misaki, and K. Terada (1982) Decomposition of Tin(IV) Oxide, Antimony(III) Oxide, and Bismuth(III) Oxide by Fusion with Ammonium Iodide and its Application for Analysis of Environmental Samples, Bunseki Kagaku, 31: 141-145.

82MAT 04 K. Matsumoto, Y. Misaki, K. Hayashi, and K. Terada (1982) Decomposition of Titanium Dioxide and Zirconium Dioxide by Fusion with Ammonium Hydrogen Sulfate, Fresenius Zeitschrift fur Analytische Chemie, 312: 542-543.

82MAY 01 T. W. May (1982) Recovery of Endogenous Selenium from Fish Tissue by Open System Dry Ashing, Journal of the Association of Official Analytical Chemists, 65: 1040-1145.

82MCG 01 J. A. McGynn and T. D. Rice (1982) Proceedings of a Symposium on Characteristics of Australien Coals and their Consequences for Utilization, CSIRO Division of Fossil Fuels, Sydney; taken from 85CLA 02.

82MIL 01 J. C. Mills, K. Turner, P. Roller, and C. Belcher (1982) Direct Determination of Trace Elements in Coal: Wavelength Dispersive X-ray Spectrometry with Matrix Correction using Compton Scattered Radiation, X-ray Spectrometry, 10: 131-137

82MOR 01 J. Mortatti, F. Krug, L. Pessenda, and E. Zagatto (1982) Determination of Iron in Natural Waters and Plant Material with 1,10-Phenanthroline by Flow Injection Analysis, Analyst 107: 659-663.

82MOR 02 J. S. Morris, M. F. Smith, and R. E. Morrow (1982) INAA Determination of Selenium via Se-77m in Plasma, Semen, and Hair Samples from Beef and Dairy Bulls, Journal of Radioanalytical Chemistry, 69: 473-494.

82MUR 01 R. S. S. Murthy and D. E. Ryan (1982) Rapid Neutron Activation Analysis of Biological Samples after Removal of Sodium on Kryptofix 221B Polymer, Analytica Chimica Acta, 144: 107-114.

82NAD 01 R. A. Nadkarni (1982) Applications of Hydride Generation-Atomic Absorption Spectrometry to Coal Analysis, Analytica Chimica Acta, 135: 363-368.

CODE N REFERENCE

82NAD 02 R. A. Nadkarni, R. I. Botto, and S. E. Smith (1982) Comparison of Two Atomic Spectroscopic Methods for Elemental Analysis of Geological Materials, Atomic Spectroscopy, 3: 180-184.

82NYG 01 D. D. Nygaard and J. H. Lowry (1982) Sample Digestion Procedures for Simultaneous Determination of As, Sb, and Se by Inductively Coupled Argon Plasma Emission Spectrometry with Hydride Generation, Analytical Chemistry, 54: 803-807.

82OMA 01 M. Omar and H. J. M. Bowen (1982) Pre-concentration of Environmental Tin and its Determination using Catechol Violet, Analyst, 107: 654-658.

82OWE 01 J. W. Owens, E. S. Gladney, and D. Knab (1982) Determination of Boron in Geological Materials by Inductively Coupled Plasma Emission Spectrometry, Analytica Chimica Acta, 135: 169-172.

82PEL 01 P. A. Pella and J. R. Sieber (1982) Intercomparison of Selected Semi-empirical and Fundamental Parameter Interelement Correction Methods in X-ray Spectrometry, X-ray Spectrometry, 11: 167-169.

82PER 02 G. Pershagen, B. Lind, and N.-E. Bjorklund (1982) Lung Retention and Toxicity of Some Inorganic Arsenic Compounds, Environmental Research, 29: 425-434.

82POL 01 H. Polkowska-Motrenko, M. Dermelj, and A. R. Byrne (1982) Radiochemical Neutron Activation Analysis of Selenium using Carbamate Extraction, Radiochemical and Radioanalytical Letters, 53: 319-328.

82PRE 01 J. R. Preer, B. R. Stephens, and C. W. Bland (1982) Sample Preparation in Determination of Lead in Garden Vegetables by Flame Atomic Absorption Spectrophotometry, Journal of the Association of Official Analytical Chemists, 65: 1010-1014.

82QUR 01 I. H. Qureshi, M. S. Chaudhary, and S. Ahmad (1982) Trace Element Concentration in Head Hair of the Inhabitants of the Rawalpindi-Islamabad Area, Journal of Radioanalytical Chemistry, 68: 209-218.

82RAI 01 T. C. Rains, T. A. Rush, and T. A. Butler (1982) Innovations in Atomic Absorption Spectrophotometry with Electrothermal Atomization for Determining Lead in Foods, Journal of the Association of Official Analytical Chemists, 65: 994-999.

82RIT 01 C. J. Ritter (1982) The Dry-ashing Method of Preparing Sewage Sludge for Cd and Pb Determinations by AAS, American Laboratory, 14(8): 72-73.

82ROD 03 M. Rodriguez-Flores and E. Rodriguez-Castellon (1982) Lead and Cadmium Levels in Soil and Plants near Highways and Their Correlation with Traffic Density, Environmental Pollution, 4B: 281-290.

82ROE 01 K. K. Roe, W. Burnett, K. Kim, and M. Beers (1982) Excess Protactinium in Phosphate Nodules from a Coastal Upwelling Zone, Earth and Planetary Science Letters, 60: 39-46.

82ROE 02 I. Roelandts, G. Robaye, G. Weber, and J. Delbrouck (1982) Non-destructive Determination of Bromine in Blood Serum Samples using Proton Induced X-ray Emission Spectrometry, Radiochemical and Radioanalytical Letters, 50: 319-332.

CODE	N	REFERENCE
82SAK	01	M. Sakata and O. Shimoda (1982) Atomic Absorption Determination of Heavy Metals in Sediment by Digestion Method using Teflon-lined Bomb, Bunseki Kagaku, 31: T81-T86.
82SAR	01	R. C. Sarkar and M. S. Das (1982) Differential Spectrophotometric Determination of Silica in Rocks as Alpha-Molybdosilicic Acid in Presence of Phosphate and Other Interferences, Analytica Chimica Acta, 134: 401.
82SAT	01	T. Sato and T. Kato (1982) Estimates of Iodine in Biological Materials by Epithermal Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 68: 175-180.
82SAT	02	R. D. Satzger, C. Clow, E. Bonnin, and F. Fricke (1982) Determination of Background Levels of Lead and Cadmium in Raw Agricultural Crops by using Differential Pulse Anodic Stripping Voltammetry, Journal of the Association of Official Analytical Chemists, 65: 987-991.
82SCH	01	P. Schramel and X. Li-Qiang (1982) Determination of Be in the PPB Range in Three Standard Reference Materials by Inductively Coupled Plasma Atomic Emission Spectrometry, Analytical Chemistry, 54: 1333-1336.
82SCH	03	A. A. Schilt and M. R. di Tusa (1982) Spectrophotometric Determination of Iron and Reducing Agents with PPTS, A New Water-soluble Ferroin-type Chromogen of Superior Sensitivity, Talanta, 29: 129-132.
82SCH	04	P. Schramel, X. Li-Quiang, A. Wolf, and S. Hasse (1982) ICP-Emissionspektroskopie: Ein Analytisches Verfahren zur Klarschlamm und Bodenuberwachung in der Routine, Fresenius Zeitschrift fur Analytische Chemie, 313: 213-216.
82SCH	05	J. O. Schmidt, L. Palgaard, and J. Westermann (1982) Determination of Boron by Fast Instrumental Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 72: 425-436.
82SEG	01	C. Segebade, M. Kuhl, B. Schmitt, and R. Neider (1982) Some Remarks on the State of Photon Activation Analysis and the Use of Internal Standards, Journal of Radioanalytical Chemistry, 72: 665-696.
82SIN	01	S. A. Sinex and G. R. Helz (1982) Entrapment of Zinc and Other Trace Elements in a Rapidly Flushed Industrialized Harbor, Environmental Science and Technology, 16: 820-825.
82SMI	01	D. H. Smith, J. Walton, H. McKown, and R. Walker (1982) A Mobile Mass Spectrometry Laboratory for Isotopic Ratio Measurements of Uranium and Plutonium, Analytica Chimica Acta, 142: 355-359.
82SUB	01	K. S. Subramanian and J. C. Meranger (1982) Rapid Hydride Evolution-Electrothermal Atomisation Atomic Absorption Spectrophotometric Method for Determining Arsenic and Selenium in Human Kidney and Liver, Analyst, 107: 157.
82SUL	01	J. R. Sullivan and J. J. Delfino (1982) Determination of Mercury in Fish, Journal of Environmental Science and Health, A17: 265-275.
82SUZ	01	M. Suzuki and K. Ohta (1982) Reduction of Interferences with Thiourea in the Determination of Cadmium by Electrothermal Atomic Absorption Spectrophotometry, Analytical Chemistry, 54: 1686-1689.
82SUZ	02	S. Suzuki and S. Hirai (1982) Determination of Trace Elements in Coal and Fly Ash by Neutron Activation Analysis, Bunseki Kagaku, 31: 443-449.
82SUZ	03	M. Suzuki and K. Ohta (1982) Determination of Strontium in Biological Samples by Atomic Emission Spectrometry with Electrothermal Atomization, Fresenius Zeitschrift fur Analytische Chemie, 313: 34-37.
82TAM	01	G. Tam and G. LaCroix (1982) Dry Ashing, Hydride Generation Atomic Absorption Spectrometric Determination of As and Se in Foods, Journal of the Association of Official Analytical Chemists, 65: 647-651.
82TER	01	S. Terashima (1982) Determination of Trace Amounts of Tin in Seventy-Three Geochemical Reference Samples by Atomic Absorption Spectrometry, Geostandards Newsletter, 6: 77-81.
82TER	02	S. Terashima (1982) Determination of Trace Amounts of Beryllium in Geological Samples by Solvent Extraction and Atomic Absorption Spectrometry, Bunseki Kagaku, 31: 727-729.
82TER	03	R. Tertian and F. Claisse (1982) Principles of Quantitative X-ray Fluorescence Analysis, Heyden, London.
82THO	02	J. Thomson (1982) A Total Dissolution Method for Determination of the Alpha Emitting Isotopes of Uranium and Thorium in Deep-sea Sediments, Analytica Chimica Acta, 142: 259-268.
82TIN	01	B. Ting, J. Pagounes, and M. Janghorbani (1982) Radiochemical Neutron Activation Analysis of Stable Isotopes in Relation to Human Mineral Nutrition, Journal of Radioanalytical Chemistry, 70: 133-144.
82UCH	02	H. Uchikawa, R. Furuta, and Y. Mihara (1982) The Determination of Trace Mercury in Solid Fuel by Atomic Absorption Spectrometry, Bunseki Kagaku, 31: 367-372.
82VAN	01	C. Vanoeteren, R. Cornelis, J. Versieck, and J. Hoste (1982) Trace Element Patterns in Human Lung Tissues, Journal of Radioanalytical Chemistry, 70: 219-238.
82VER	03	M. Verlinden (1982) On the Acid Decomposition of Human Blood and Plasma for the Determination of Selenium, Talanta, 29: 875-882.
82VIS	01	P. Viswanadham, D. Smick, F. Pisney, and W. Dilworth (1982) Comparison of Ion Chromatography and Titrimetry for Determination of Sulfur in Fuel Oils, Analytical Chemistry, 54: 2431-2433.
82VOG	01	J. R. Vogt, C. Graham, M. Glascock, and R. Cobean (1982) A Study of Mesoamerican Obsidian Sources using Activation Analysis, Journal of Radioanalytical Chemistry, 69: 271-289.
82WEI	01	A. Weitz, G. Fuchs, and K. Bachmann (1982) AAS-Bestimmung von Cadmium und Blei in Biologischen Proben und Bodenproben nach Abtrennung durch Verfluchtigung, Fresenius Zeitschrift fur Analytische Chemie, 313: 38-42.
82WIL	01	J. R. Wilkinson, L. Ebdon, and K. W. Jackson (1982) Determination of Volatile Trace Metals in Coal by Analytical Atomic Spectroscopy, Analytical Proceedings of the Royal Society of Chemistry (London), 19: 305-307.

CODE	N	REFERENCE
82WIL	02	S. A. Wilson and C. A. Gent (1982) The Determination of Fluoride in Geologic Samples by Ion Chromatography, Analytical Letters, 15: 851-864.
82WIL	04	E. V. Williams (1982) Low-temperature Oxygen-Fluorine Radiofrequency Ashing of Biological Materals in Teflon Dishes prior to the Determination of Sn, Fe, Pb, and Cr by AAS, Analyst, 107: 1006-1013.
82YAM	01	T. Yamashige, H. Ida, M. Yamamoto, Y. Shigetomi, and Y. Yamamoto (1982), Comparison of Acid Digestion Methods with and without Hydrofluoric Acid for the Determination of Fe, Mn, Zn, Pb, Cd, and Ni in Ambient Particulates by Atomic Absorption Spectrometry, Bunseki Kagaku, 32: 169-173.
82ZEI	01	R. Zeisler and R. R. Greenberg (1982) Ultratrace Determination of Platinum in Biological Materials Via Neutron Activation and Radiochemical Separation, Journal of Radioanalytical Chemistry, 75: 27-37.
83ADE	01	S. Adeloju, A. Bond, M. Briggs, and H. Hughes (1983) Stripping Voltammetric Determination of Selenium in Biological Materials by Direct Calibration, Analytical Chemistry, 55: 2076-2082.
83AHM	01	S. Ahmad, M. Chaudhary, A. Mannan, and I. Qureshi (1983) Determination of Toxic Elements in Tea Leaves by Instrumental Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 78: 375-383.
83AHM	02	R. bin Ahmad, J. O. Hill, and R. J. Magee (1983) Direct Determination of Selenium(IV) in Biological Samples by Cathodic Stripping Voltammetry, Analyst, 108: 835-839.
83ALL	01	M. Allegrini, R. Delfanti, M. di Cassa, and E. Orvini (1983) Determination of Iodine in Biological Matrices using a Fast Radiochemical Separation, Radiochemical and Radioanalytical Letters, 59: 163-170.
83AND	01	D. L. Anderson, G. E. Gordon, W. B. Walters, W. H. Zoller, and R. M. Lindstrom (1983), Neutron-capture Prompt Gamma-ray Activation Analysis, in 83SHO 01, pp. 159-164.
83AND	02	J. R. Anderson (1983) Petrology of a Portion of the Eastern Penninsular Ranges Mylonite Zone, Southern California, Contributions to Mineralogy and Petrology, 84: 253-271.
83ATS	01	I. Atsuya and K. Itoh (1983) The Use of an Inner Miniature Cup for Direct Determination of Powdered Biological Samples by Atomic Absorption Spectrometry, Spectrochimica Acta, 38B: 1259-1264.
83BAL	01	A. M. E. Balaes and J. J. Jacobs (1983) The Installation and Commissioning of a Siemens SRS200 Sequential X-ray Fluorescence Spectrometer, Mintek report no. M80.
83BAR	02	R. M. Barnes and H. S. Mahanti (1983) Analysis of Bauxite by Inductively Coupled Plasma Atomic Emission Spectroscopy, Spectrochimica Acta, 38B: 193-197.
83BER	01	C. Berthelot, H. Eschbach, V. Verdingh, and F. Verheyen (1983), The Homogeneity Control of Reference Materials by Photon Activation, International Journal of Environmental Analytical Chemistry, 16: 227-236.
83BET	01	M. Bettinelli (1983) Fusion Procedure for the Trace Metal Analysis of Coal by Atomic Absorption, Atomic Spectrometry, 4: 5-9.
83BET	02	M. Bettinelli (1983) Determination of Fluorine in Environmental Standard Reference Materials with a Fluoride Ion-selective Electrode, Analyst, 108: 404-407.
83BIR	01	J. R. Bird and E. Clayton (1983) The PIGME Method for Fluorine Determination, Nuclear Instruments and Methods in Physics Research, 218: 525-528.
83BLO	01	N. Bloom (1983) Determination of Silver in Marine Sediments by Zeeman Corrected Graphite Furnace Atomic Absorption Spectroscopy, Atomic Spectroscopy, 4: 204-207.
83BOU	01	P. Bourbon, J. Esclassan, and J. Vandaele (1983) Determination de Traces de Molybdene par Polarographie Impulsionnelle du Complexe Hydroxyquinoleine-Molybdene, Analusis, 11: 341-344.
83BOY	01	W. V. Boynton and D. H. Hill (1983) Composition of Bulk Samples and a Possible Pristine Clast from Allan Hills A81005, Geophysical Research Letters, 10: 837-840.
83BPN	01	Battelle Pacific Northwest Laboratories (1983) Private Communication, taken from 83LUT 01.
83BRA	01	A. Brandone, P. A. Borroni, and N. Genova (1983) Determination of Arsenic, Cadmium, and Mercury in Biological Samples by Neutron Activation Analysis, Radiochemical and Radioanalytical Letters, 57: 83-94.
83BRA	02	P. Bratter, K. P. Berthold, and P. E. Gardiner (1983) The Use of Reference Materials as Standards in the Simultaneous Multielement Analysis of Biological Materials using Inductively Coupled Plasma Spectrometry, Spectrochimica Acta, 38B: 221-228.
83BRO	01	A. Broekman and J. G. van Raaphorst (1983) Stable Isotope Dilution Analysis by Thermal Ionization Mass Spectrometry, Fresenius Zeitschrift fur Analytische Chemie, 315: 30-33.
83BRO	02	R. J. Brown (1983) Determination of Trace Metals in Petroleum and Petroleum Products using an Inductively Coupled Plasma Optical Emission Spectrometer, Spectrochimica Acta, 38B: 283-289.
83BYR	01	R. E. Byrne (1983) A Rapid Method for the Determination of Arsenic, Cadmium, Copper, Lead, and Zinc in Airborne Particulates by Flame Atomic Absorption Spectrometry, Analytica Chimica Acta, 151: 187-194.
83CAR	01	G. Carvajal, D. Mahan, D. Goforth, and D. Leyden (1983) Evaluation of Methods based on Acid Extraction and Atomic Absorption Spectrometry for Multielement Determinations in River Sediments, Analytica Chimica Acta, 147: 133-150.
83CAR	02	E. E. Cary and M. Rutzke (1983) Electrothermal Atomic Absorption Spectroscopic Determination of Chromium in Plant Tissues, Journal of the Association of Official Analytical Chemists, 66: 850-852.
83CHA	01	D. Chase (1983) Written Communication of Background Information from an American Laboratory Article, Instrumentation Laboratory, Andover, Massachusetts.

CODE	N	REFERENCE
83CHA	02	C. Chan (1983) Semiautomated Determination of Fluoride in Rocks, American Laboratory, 15(10): 32-41.
83CLA	01	R. N. Clayton and T. K. Mayede (1983) Oxygen Isotopes in Eucrites, Shergottites, Nakhlites, and Chassignites, Earth and Planetary Science Letters, 62: 1-6.
83CRO	01	J. G. Crock, F. E. Lichte, and P. H. Briggs (1983) Determination of Elements in NBS' Geological Reference Materials SRM 278 and SRM 688 by Inductively Coupled Argon Plasma Atomic Emission Spectrometry, Geostandards Newsletter 7: 335-340.
83DAN	01	H. S. Dang, H. Desai, D. Jaiswal, S. Kayasth, and S. Somasundaram (1983), A Sequential Multielement Separation Scheme for Determination of As, Mn, Mo, Cu, and Zn in Human Milk by Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 77: 65-70.
83DEL	01	D. Dellar (1983) Evaluation of the Determination of High Levels of Total Cadmium in Foodstuffs using Flame Atomic Absorption Spectrophotometric Measurement, Analyst, 108: 759-763.
83DOU	01	D. J. Douglas, E. S. Quan, and R. G. Smith (1983) Elemental Analysis with an Atmospheric Pressure Plasma (MIP,ICP)/Quadrupole Mass Spectrometer System, Spectrochimica Acta, 38B: 39-48.
83DOU	02	D. Douglas, G. Rosenblatt, and E. Quan (1983) Inductively Coupled Plasma/Mass Spectrometry -- A New Technique for Trace Element Analysis, Trace Substances in Environmental Health, 17: 385-390.
83ELA	01	A. El-Ahraf, W. V. Willis, and F. Moses (1983) Determination of the Concentration of Metals in Animal Feeds: Cd, Cr, Cu, Fe, Mg, Ni, Pb, and Zn in Dairy Cattle Feed, Manure, and Processed Manure, Biological Trace Element Research, 5: 129-137.
83ELK	01	E. A. Elkhatib, O. L. Bennet, and R. J. Wright (1983) Determination of Total Arsenic in Soil by Differrential Pulse Polarography, Soil Science Society of America Journal, 47: 836-838.
83EPS	01	M. S. Epstein (1983) Determination of Ultratrace Levels of Lead in Reference Fuels by Graphite Furnace Atomic Absorption, Atomic Spectrometry, 4: 62-63.
83ESA	01	S. Esala, E. Vuori, and L. Niinisto (1983) Determination of Nanogram Amounts of Fluorine in Breast Milk by Ashing-diffusion Method and the Fluoride Electrode, Mikrochimica Acta [Wien], 1983I: 155-165.
83FAG	01	F. Fagioli and S. Landi (1983) Evaluation of a New Method for the Determination of Elements in Vegetable Foods and Feeds by Atomic Absorption Spectroscopy with Sampling of Carbonaceous Slurry, Analytical Letters, 16: 1435-1447.
83FAR	01	J. G. Farmer and M. J. Gibson (1983) Erratum to Direct Determination of Cadmium, Chromium, Copper, and Lead in Siliceous Standard Reference Materials, Atomic Spectrometry, 4: 112.
83FRA	01	A. Frank and L. R. Petersson (1983) Selection of Operating Conditions and Analytical Procedure in Multi-metal Analysis of Animal Tissues by D.C. Plasma Atomic Emission Spectroscopy, Spectrochimica Acta, 38B: 207.
83GAR	01	M. F. Garbauskas and J. Wong (1983) XRF Analysis of Trace Titanium in Coal Using Fundamental Parameters, X-ray Spectrometry, 12: 118-120.
83GOG	01	R. Goguel (1983) Improved Background Correction in the Analysis of Cadmium by Flame Atomic Absorption, Geostandards Newsletter, 7: 341-344
83GRE	01	R. R. Greenberg and H. M. Kingston (1983) Trace Element Analysis of Natural Water Samples by Neutron Activation Analysis with Chelating Resin, Analytical Chemistry, 55: 1160-1165.
83GRE	02	R. R. Greenberg (1983) Improved Radiochemical Procedures for High Sensitivity Measurements of Ultratrace Concentrations of Tin and Mercury in 83SHO 01, pp. 140-141.
83GRO	02	Z. Grobenski, D. Weber, B. Welz, and J. Wolff (1983) Determination of Cesium and Rubidium by Flame and Furnace Atomic Absorption Spectrometry, Analyst, 108: 925-932.
83GUN	01	M. F. Guns (1983) La Determination du Soufre Total Dans les Vegetaux par Fluorescence des Rayons X, Analusis, 11: 295-298.
83HER	01	J. A. Hern, G. K. Rutherford, and G. W. van Loon (1983) Determination of Chloride, Nitrate, Sulfate, and Total Sulfur in Environmental Samples by Single-column Ion Chromatography, Talanta, 30: 677-682.
83HOE	01	M. Hoenig and P. van Hoeyweghen (1983) Effect de L'Acide Ascorbique sur la Determination du Plomb dans des Matrices Vegetales par ETA-AAS, Spectrochimica Acta 38B: 1179-1182.
83HOF	01	D. Hoffer, I. B. Brenner, and L. Halicz (1983) Application of a Low Power Ar ICP for the Analysis of Major and Minor Elements in Phosphate Rocks, Geological Survey of Israel, Geochemistry Division (Jerusalem), Report No. 12.
83HOL	01	W. Holak (1983) Determination of Copper, Nickel, and Chromium in Foods, Journal of the Association of Official Analytical Chemists, 66: 620-622.
83HSU	01	C.-G. Hsu and D. C. Locke (1983) Digestion Methods for Determination of Cadmium and Lead in Organic and Silica-rich Sediments, Analytica Chimica Acta, 153: 313-318.
83ICH	01	S. Ichinoki, M. Yamazaki, and T. Morita (1983) Simultaneous Determination of Lead, Nickel, and Copper in Orchard Leaves by High Performance Liquid Chromatography Followed by Solvent Extraction, Bunseki Kagaku, 32: 285-287.
83JAC	01	J. S. Jacobson (1983) Written Communication, Boyce Thompson Institute for Plant Research, Cornell University, Ithaca, New York.
83JEN	01	D. R. Jenke and R. Woodriff (1983) Continued Development of Direct Aerosol Introduction in Constant Temperature Furnace Atomic Absorption Spectroscopy, Applied Spectroscopy, 37: 470-472.
83JER	01	R. E. Jervis, S. Landsberger, S. Aufreiter, J. van Loon, R. Lecomte, and S. Monaro (1983), Trace Elements in Wet Atmospheric Deposition: Application and Comparison of PIXE, INAA, and Graphite-Furnace AAS Techniques, International Journal of Environmental Analytical Chemistry, 15: 89-106.

CODE N REFERENCE

83KAT 01 M. Katoh and K. Kudo (1983)
Substoichiometric Determination of Lanthanum by using EDTA and 8-Hydroxyquinoline, Journal of Radioanalytical Chemistry 79: 23-34.

83KAT 02 T. Katami, T. Hayakawa, M. Furukawa, and S. Shibata (1983)
Extraction and Spectrophotometric Determination of Cobalt in Coal Fly Ash using 2-[2-(3,5-Dibromopyridyl)azo]-5-dimethylaminobenzoic Acid, Analyst, 108: 864-869.

83KEI 01 J. P. Keilsohn, R. D. Deutsch, and G. M. Hieftje (1983)
The Use of a Microarc Atomizer for Sample Introduction into an Inductively Coupled Plasma, Applied Spectroscopy, 37: 101

83KEL 01 W. R. Kelley and J. D. Fassett (1983)
Determination of Picogram Quantities of Uranium in Biological Tissues by Isotope Dilution Thermal Ionization Mass Spectrometry with Ion Counting Detection, Analytical Chemistry, 55: 1040-1044.

83KEN 04 W. T. Kennedy, W. B. Hubbard, and J. G. Tarter (1983)
Rapid Analysis of Fluorine in Geological Samples with Ion Chromatographic Detection, Analytical Letters, 16: 1133-1148.

83KIM 01 K. H. Kim and W. C. Burnett (1983)
Gamma-ray Spectrometric Determination of Uranium-series Nuclides in Marine Phosphorites, Analytical Chemistry, 55: 1796-1800.

83KNA 01 D. Knab (1983)
Written Communication, Los Alamos National Laboratory, New Mexico.

83KOH 01 T.-S. Koh and T. H. Benson (1983)
Metals and Other Elements: Critical Re-appraisal of Fluorometric Method for Determination of Selenium in Biological Materials, Journal of the Association of Official Analytical Chemists, 66: 918-925.

83KOL 01 H. W. Kolmer and S. E. Raptis (1983)
Selenium Content of Geochemical Reference Samples Determined by a Simple Method at the ng/g Level, Geostandards Newsletter, 7: 315-318.

83KUM 01 T. Kumamaru, H. Matsuo, and M. Ikeda (1983)
Effect of Continuous Prereduction by Heating with Potassium Iodide and Hydrochloric Acid for Determining Arsenic (III, V) by the Continuous Hydride Generation-Atomic Absorption Spectrometry using Sodium Tetrahydroborate Reduction, Bunseki Kagaku, 32: 357-361.

83LI 01 M. Li and R. H. Filby (1983)
Determination of Sulfur in Fly Ash and Fuel Oil Standard Reference Materials by Radiochemical Neutron Activation Analysis and Liquid Scintillation Counting, Analytical Chemistry, 55: 2336-2340.

83LIN 01 R. M. Lindstrom (1983)
Internal NBS Communication, taken from 83GRE 01.

83LIN 02 R. M. Lindstrom, R. R. Greenberg, and R. F. Flemming (1983)
Multielement Analysis of Coal Standard Reference Materials, in 83SHO 01, pp. 147-148.

83LIP 01 H. J. Lippolt, H. Schleicher, and I. Raczek (1983)
Rb-Sr Systematics of Permian Volcanites in the Schwarzwald (SW-Germany): Part I. Space of Time Between Plutonism and Late Orogenic Volcanism, Contributions to Mineralogy and Petrology, 84: 272-280.

CODE N REFERENCE

83LOS 01 R. D. Loss, K. J. R. Rosman, and J. R. de Laeter (1983)
Ag, Te, and Pd in 17 Geochemical Reference Materials by Mass Spectrometric Isotope Dilution Analysis, Geostandards Newsletter, 7: 321-324.

83LOV 01 M. A. Lovell and J. G. Farmer (1983)
The Determination of Arsenic in Soil and Sediment Digests by Graphite Furnace Atomic Absorption Spectrometry, International Journal of Environmental Analytical Chemistry, 14: 181-192.

83LUT 01 G. J. Lutz (1983)
I-129 Analysis, in 83SHO 01, pp. 142-143.

83MAD 01 P. P. Madsen, I. Drabaek, and J. Sorensen (1983)
The Determination of Copper and Lead in Sediments by Potentiometric Stripping Analysis, Analytica Chimica Acta, 151: 479-482.

83MAH 01 W. A. Maher (1983)
A Decomposition Procedure for the Determination of Arsenic in Marine Samples, Talanta, 30: 534-536.

83MAH 03 K. I. Mahan and D. E. Leyden (1983)
Simultaneous Determination of Sixteen Major and Minor Elements in River Sediments by Energy-dispersive X-ray Fluorescence Spectrometry after Fusion in Lithium Tetraborate Glass, Analytica Chimica Acta, 147: 123-131.

83MAH 04 W. A. Maher (1983)
Spectrophotometric Determination of Arsenic in Biological Tissues and Sediments after Digestion with Nitric, Sulfuric, and Perchloric Acids and Pre-concentration by Zinc Column Arsine Generation and Trapping, Analyst, 108: 939-943.

83MAH 05 H. S. Mahanti and R. M. Barnes (1983)
Determination of Trace Elements in Coal and Other Energy Related Materials by Inductively Coupled Plasma Emission Spectrometry after Collection on a Poly(dithiocarbamate) Resin, Analytica Chimica Acta, 149: 395-400.

83MAR 03 Y. Maruyama and Y. Nagaoka (1983)
Determination of Arsenic in Biological Materials using Ammonium Molybdate Labeled with Mo-99, Journal of Radioanalytical Chemistry, 76: 81-85.

83MAR 04 J. Marshall, D. Littlejohn, J. Ottaway, J. Harnly, N. Miller-Ihli, and T. C. O'Haver (1983),
Simultaneous Multielement Analysis by Carbon Furnace Atomic Emission Spectrometry, Analyst, 108: 178-188.

83MAR 05 R. W. Marts and J. J. Blaha (1983)
Mixed Acid Solubilization Procedure for Determination of Total Mercury in Food Samples, Journal of the Association of Official Analytical Chemists, 66: 1421-1423.

83MAS 02 K. Masumoto and M. Yagi (1983)
Charged Particle Activation Analysis of Phosphorus in Biological Materials, Journal of Radioanalytical Chemistry, 78: 233-239.

83MAT 02 I. Matsubara (1983)
Determination of Trace of Molybdenum in Biological Materials by a Combined Ion Exchange-Spectrophotometric Method, Bunseki Kagaku, 32: T97-T99.

83MCC 02 J. T. McCaffrey, M.-L. W. Wu, and R. G. Michel (1983)
Discrimination Against Atomic-emission Spectral Interferences in Wavelength-modulated Continuum Source Excited Flame Atomic-fluorescence Spectrometry, Analyst, 108: 1195-1208.

CODE N	REFERENCE
83MIL 01	J. C. Mills (1983) Determination of Boron, Beryllium, and Lithium in Coal Ash and Geological Materials by Spark Optical Emission Spectrometry, Analytica Chimica Acta, 154: 227-234.
83NAD 01	R. A. Nadkarni and D. M. Pond (1983) Applications of Ion Chromatography for Determination of Selected Elements in Coal and Oil Shale, Analytica Chimica Acta, 146: 261-266.
83NDI 01	C. L. Ndiokwere, V. P. Guinn, and D. Burtner (1983) Trace Elemental Composition of Nigerial Coals Measured by Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 79: 123-128.
83NOR 01	J. D. Norman, L. Stumpe, J. Trimm, and F. Johnson (1983) Argon Plasma Emission Spectrometry of Uranium in Phosphatic Materials, Journal of the Association of Official Analytical Chemists, 66: 949-951.
83OBR 01	I. Obrusnik and S. Posta (1983) Instrumental Neutron Activation Analysis of NBS 1633A Fly Ash and 1632A Bituminous Coal Reference Samples with the use of Short Irradiations, Geostandards Newsletter, 7: 291-293.
83OHM 01	T. Ohmori (1983) Spectrophotometric Determination of a Small Amount of Aluminium with Stilbazo and Zephiramine in Alkaline Solution; Determination of Aluminium in Standard Rocks and Cement, Bunseki Kagaku, 32: 485-487.
83OLI 01	E. de Oliveira, J. W. McLaren, and S. S. Berman (1983) Simultaneous Determination of Arsenic, Antimony, and Selenium in Marine Samples by Inductively Coupled Plasma Atomic Emission Spectrometry, Analytical Chemistry, 55:2047.
83OLS 02	G. J. Olson, F. E. Brinckman, and J. A. Jackson (1983) Purge and Trap Flame Photometric Gas Chromatography Technique for the Speciation of Trace Organotin and Organosulfur Compounds in Human Urine Standard Reference Material, International Journal of Environmental Analytical Chemistry, 15: 249-261.
83PEL 01	P. A. Pella, H. Kingston, J. Sieber, and L.-Y. Feng (1983) Effect of Sample Dissolution Procedures on X-ray Spectrometric Analysis of Biological Materials, Analytical Chemistry, 55: 1193-1194.
83PRU 01	E. Pruszkowska, P. Barrett, R. Ediger, and G. Wallace (1983) Determination of Arsenic and Selenium using Hydride System Combined with ICP, Atomic Spectroscopy, 4: 94-97.
83RAM 01	G. O. Ramseyer and G. H. Morrison (1983) Relative Sensitivity Factors in Quantitative Secondary Ion Mass Spectrometry Analysis of Biological Reference Materials Analytical Chemistry, 55: 1963-1970.
83RAP 01	S. E. Raptis, G. Knapp, and A. P. Schalk (1983) Novel Method for the Decompostion of Organic and Biological Materials in an Oxygen Plasma Excited at High Frequency for Elemental Analysis, Fresenius Zeitschrift fur Analytische Chemie, 316: 482-487.
83SAN 02	R. W. Sanders, K. Olsen, W. Weimer, and K. Nielson (1983) Multielement Analysis of Unweighed Oil Samples by X-ray Fluorescence Spectrometry with Two Excitation Sources, Analytical Chemistry, 55: 1911-1914.
83SAR 01	B. Sarx and K. Bachmann (1983) Speciation von As-Verbindungen durch Verfluchtigung aus Festproben, Fresenius Zeitschrift fur Analytische Chemie, 316: 621-626.
83SCH 03	P. Schramel and X. Li-Qiang (1983) Determination of 14 Elements in Biological Samples by Simultaneous Inductively Coupled Plasma Atomic Emission Spectrometry using Standard Reference Materials as Multielement Standards, Fresenius Zeitschrift fur Analytische Chemie, 314: 671-677.
83SCH 04	P. Schramel (1983) Consideration of Inductively Coupled Plasma Spectrometry for Trace Element Analysis in the Bio-medical and Environmental Fields, Spectrochimica Acta, 38B: 199-206.
83SHO 01	F. J. Shorten, editor (1983) NBS Reactor: Summary of Activities July 1981 through June 1982, NBS Technical Note.
83SIR 01	C.-I. Siripone, G. D. Wals, and H. A. Das (1983) Neutron Activation Analysis of Dry Biological Materials using Mineralization with a Saturated Mg(NO3)2 Solution and Scavenging by Activated Carbon, Journal of Radioanalytical Chemistry, 79: 35-41.
83SIU 01	K. W. M. Siu and S. S. Berman (1983) Determination of Selenium in Marine Sediments by Gas Chromatography with Electron Capture Detection, Analytical Chemistry, 55: 1603-1605.
83STE 05	J. W. Steiner and H. L. Kramer (1983) In-situ Gaseous Pre-treatment of Liver Extracts in a Modified Carbon Rod Atomizer During the Determination of Cadmium and Lead, Analyst, 108: 1051-1059.
83TAK 01	Y. Takahashi and M. Rey (1983) A Dedicated XRF Analyzer for Sulfur in Oils, American Laboratory, 15(11): 27-42.
83TAK 02	H. Takagi, T. Kimura, K. Iwashima, and N. Yamagata (1983) A Simple and Rapid Method for the Determination of Iodine in Rice Samples by Radiochemical Neutron Activation Analysis, Bunseki Kagaku, 32: 513-515.
83TER 01	S. Terashima (1983) Determination of Beryllium in Eighty Geological Reference Samples by Atomic Absorption Spectrometry, Geostandards Newsletter, 7: 295-299.
83TJI 01	P. S. Tjioe, K. Volkers, J. Kroon, and J. de Goeij (1983) Distribution Patterns of Rare-earth Elements in Biological Materials Evaluated by Radiochemical Neutron Activation Analysis, Journal of Radioanalytical Chemistry, 80: 129-139.
83UCH 01	H. Uchikawa, R. Furuta, and Y. Mihara (1983) Determination of Phosphorus in Ceramic Materials and Ceramic Products by Inductively Coupled Plasma Atomic Emission Spectroscopy, Bunseki Kagaku, 32: 291-297.
83UCH 02	H. Uchikawa, R. Furuta, and Y. Mihara (1983) Determination of Cadmium in Ceramic Materials and Ceramic Products by Inductively Coupled Plasma-Atomic Emission Spectroscopy, Bunseki Kagaku, 32: 675-677.
83VAL 01	G. Valentine (1983) Procedures for Analysis of Silicate Rocks and Minerals at Los Alamos National Laboratory by X-ray Fluorescence, Los Alamos National Laboratory report LA-9663-MS.

CODE N REFERENCE

83WEI 02 S. H. Weissman, R. L. Carpenter, and G. J. Newton (1983) Respirable Aerosols from Fluidized Bed Coal Combustion. 3: Elemental Compositon of Fly Ash, Environmental Science and Technology, 17: 65-70.

83XIA 01 S. Xiao-quan, N. Zhe-ming, and Z. Li (1983) Determination of Arsenic in Soil, Coal Fly Ash, and Biological Samples by Electrothermal Atomic Absorption with Matrix Modification, Analytica Chimica Acta, 151: 179-185.

83YAN 01 M. Yanagisawa, H. Suzuki, K. Kitagawa, and S. Tsuge (1983) Separative Column Atomizer (SCA) for Direct Analysis by Atomic Absorption Spectrometry: GC Separtion Characteristics Spectrochimica Acta, 38B: 1143-1149.

84ABD 01 M. Abdullah, K. Fuwa, and H. Haraguchi (1984) Simultaneous Multielement Analysis of Microliter Volumes of Solution Samples by Inductively Coupled Plasma Atomic Emission Spectrometry Utilizing a Graphite Cup Direct Insertion Technique, Spectrochimica Acta, 39B: 1129-1139.

84ADE 01 S. B. Adelouju, A. M. Bond, and M. H. Briggs (1984) Critical Evaluation of Some Wet Digestion Methods for the Stripping Voltammetric Determination of Selenium in Biological Materials, Analytical Chemistry, 56: 2397-2401.

84ADE 02 S. B. Adeloju, A. M. Bond, and M. H. Briggs (1984) Assessment of Differential-pulse Adsorption Voltammetry for the Simultaneous Determination of Nickel and Cobalt in Biological Materials, Analytica Chimica Acta, 164: 181-194.

84ADE 03 S. B. Adeloju, A. M. Bond, and M. L. Noble (1984) Evaluation of Some Dry Ashing Methods for Anodic Stripping Voltammetric Determination of Cadmium and Lead in Biological Materials, Analytica Chimica Acta, 161: 303-314.

84AHL 01 M. S. Ahlberg, I. Fangmark, and L. E. Carlsson (1984) Elemental Particle Size Distribution in Coal Fly Ash Determined by PIXE Analysis of Thick Samples, Nuclear Instruments and Methods in Physical Research, 231: 511-515.

84ALF 01 G. Alfthan (1984) A Micromethod for the Determination of Selenium in Tissues and Biological Fluids by Single-test-tube Fluorimetry, Analytica Chimica Acta, 165: 187-194.

84ALK 01 A. Al-Kinai, D. Watt, B. East, and I. Harris (1984) Minor and Trace Analysis of Gallstones, Analyst, 109: 365.

84BAR 02 R. T. Barber, P. J. Whaling, and D. M. Cohen (1984) Mercury in Recent and Century-old Deep-sea Fish, Environmental Science and Technology, 18: 552-555.

84BAR 03 P. Barrett and E. Purszkowska (1984) Use of Organic Solvents for Inductively Coupled Plasma Analyses, Analytical Chemistry, 56: 1927-1930.

84BAU 01 J. Bauslaugh, B. Radziuk, K. Saeed, and Y. Thomassen (1984) Reduction of Effects of Structured Non-specific Absorption in the Determination of Arsenic and Selenium by Electrothermal Atomic Absorption Spectrometry, Analytica Chimica Acta, 165: 149-157.

84BEM 01 H. Bem and D. E. Ryan (1984) Determination of Seven Trace Elements in Natural Waters by Neutron Activation Analysis after Preconcentration with 1-(2-Pyridylazo)-2-naphthol, Analytica Chimica Acta, 166:189

84BIS 01 S. Biswas, M. Khaliquezzaman, M. Islam, and A. Kahn (1984) The Use of a Single Multielement Standard for Trace Analysis in Biological Materials by External Beam PIXE, Nuclear Instruments and Methods in Physical Research, 231: 337-342.

CODE N REFERENCE

84BLA 01 W. M. Blakemore, P. H. Casey, and W. R. Collie (1984) Simultaneous Determination of 10 Elements in Wastewater, Plasma, and Bovine Liver by Inductively Coupled Plasma Emission Spectrometry with Electrothermal Atomization, Analytical Chemistry, 56: 1376-1379.

84BOR 01 T. Bornhorst, W. Rose, and S. Wolfe (1984) Gold Content of Eleven French Goechemical Reference Samples, Geostandards Newsletter, 8: 1-2.

84BOT 01 R. I. Botto (1984) Quality Assurance in Operating a Multielement ICP Emission Spectrometer, Spectrochimica Acta, 39B: 95-113.

84BRA 01 H. Braun and M. Metzger (1984) Umweltanalytische Nickel-Bestimmung durch Adsorptions Voltammetrie mit der Queksilberfilmelektrode, Fresenius Zeitschrift fur Analytische Chemie, 318: 321-326.

84BRA 02 P. Bratter and P. Schramel, editors (1984) Trace Element Analytical Chemistry in Medicine and Biology, Proceedings of the Third International Workshop, Neuherberg, Federal Republic of Germany, Walter de Gruyter & Company, Berlin, Vol. 3.

84BRO 03 A. Broekman and J. G. van Raaphorst (1984) Stable Isotope Dilution Analysis by Thermal Ionization Mass Spectrometry (II): The Determination of Cd and Cu, Fresenius Zeitschrift fur Analytische Chemie, 318: 398-401.

84BUS 01 G. Buso, P. Colautti, G. Moschini, H. Xusheng, and B. Stievano (1984), High Sensitivity PIXE Determination of Selenium in Biological Samples using a Preconcentration Technique, Nuclear Instruments and Methods, 231: 177-180.

84BYR 01 A. R. Byrne (1984) A Simple Radiochemical Procedure for Analysis of Molybdenum and Tungsten in Biological Materials by Radiochemical Activation Analysis, in 84BRA 02, pp. 505-511.

84BYR 02 A. R. Byrne, M. Dermelj, L. Kosta, and M. Tusek-Znidaric (1984), Radiochemical Neutron Activation Analysis in the Standardization of Trace Elements in Biological Reference Materials at the Nanogram Level, Mikrochimica Acta [Wien], 1984I: 119-126.

84CEL 01 I. Celenk and F. Ozek (1984) Simultaneous Neutron Activation Determination of Alumina and Silica in Geological Samples using a 5 Ci Pu-Be Source, Journal of Radioanalytical and Nuclear Chemistry, 85: 83-90.

84CHA 02 M. S. Chaudhary, S. Ahmad, A. Mannan, and I. Qureshi (1984) INAA of Toxic Elements in Coal and Their Transfer into Environments, Journal of Radioanalytical and Nuclear Chemistry, 83: 387-396.

84CLE 01 B. E. Clevenger, E. Hinderberger, D. Yates, and W. James (1984), Analysis for Trace Elements in Magnetohydrodynamic (MHD) Pilot Power Plant Effluents, Environmental Science and Technology, 18: 253-257.

84CUB 01 M. J. S. Cubells, M. G. Cuiugeda, and L. A. Querada (1984) Rapid Determination of Copper, Iron, and Zinc in Liver Biopsies, Atomic Spectroscopy, 5: 217-221.

84DAS 01 S. Dasgupta, B. Sinha, and N. S. Rawat (1984) Direct Complexometric Determination of Aluminium and Moderate to Low Amounts of Titanium and Iron using Tartaric Acid as a De-masking Agent, Analyst, 109: 39-41.

CODE	N	REFERENCE
84DEL	01	R. Delfanti, M. DiCasa, M. Gallorini, and E. Orvini (1984) Five Years Activity in Determining Trace Elements for the Certification of Standard Reference Materials by Neutron Activation Analysis, Mikrochimica Acta [Wien], 1984I: 239.
84DRA	01	I. Drabaek and V. Carlsen (1984) Comparison of Different Analytical Techniques for the Determination of Organic Mercury, International Journal of Environmental Analytical Chemistry, 17: 231-239.
84FAR	01	J. J. Fardy and G. D. McOrist (1984) Determination of Iodine in Milk Products and Biological Standard Reference Materials by Epithermal Neutron Activation Analysis, Journal of Radioanalytical and Nuclear Chemistry, 87: 239-246.
84FAR	02	J. J. Fardy, G. D. McOrist, and T. M. Florence (1984) Rapid Radiochemical Separation in Neutron Activation Analysis, Part 1: The Use of C-18 Bonded Silica Gel and Selective Complexation for Determination of Manganese, Copper, and Zinc in Biological Materials, Analytica Chimica Acta, 159: 199-209.
84FAS	01	J. D. Fassett, L. J. Powell, and L. J. Moore (1984) Determination of Iron in Serum and Water by Resonance Ionization Isotope Dilution Mass Spectrometry, Analytical Chemistry, 56: 2228-2233.
84FEN	01	X. Feng and D. E. Ryan (1984) Combination Collectors in Adsorption Colloid Flotation for Multielement Determination in Waters by Neutron Activation, Analytica Chimica Acta, 162: 47-55.
84FOG	01	T. R. Fogg and R. C. Seeley (1984) ICP-OES Analysis of Atmospheric Aerosol Patricles, American Laboratory, 16 (12): 36-39.
84FUD	01	N. Fudagawa (1984) Determination of Lead by Atomic Absorption Spectrometry with Tungsten Ribbon Atomizer, Bunseki Kagaku, 33: 301.
84FUD	02	N. Fudagawa and A. Kawase (1984) Elimination of Nitric Acid Interference in Tungsten Ribbon Atomic Absorption, Bunseki Kagaku, 33: 331.
84GIB	01	R. S. Gibson and C. A. Scythes (1984) Chromium, Selenium, and Other Trace Element Intakes of a Selected Sample of Canadian Premenopausal Women, Biological Trace Element Research, 6: 105-116.
84GLA	01	E. S. Gladney, D. B. Curtis, and D. R. Perrin (1984) Determination of Boron in 35 International Geochemical Reference Materials by Thermal Neutron Capture Prompt Gamma-ray Spectrometry, Geostandards Newsletter, 8: 43-46.
84GLA	02	E. S. Gladney, C. Burns, D. Perrin, R. Robinson, and D. Knab (1984), Quality Assurance for Environmental Analytical Chemistry: 1982, Los Alamos National Laboratory report LA-9950-MS.
84GLA	07	E. S. Gladney, D. Perrin, R. Robinson, and P. Trujillo(1984) Multitechnique Determination of Elemental Concentrations in NBS Urban Air Particulate SRM 1648 and Evaluation of its use for Quality Assurance, Journal of Radioanalytical Chemistry, 83: 379-386.
84GLA	11	E. S. Gladney, C. E. Burns, D. R. Perrin, R. D. Robinson, and N. Raybold (1984), Quality Assurance for Environmental Analytical Chemistry: 1983, Los Alamos National Laboratory report LA-10115-MS.
84GOH	01	S. Gohda, H. Yamazaki, and H. Kataoka (1984) Determination of Molybdenum in Environmental Materials by Polarized Zeeman Atomic Absorption Spectrophotometry with Graphite Furnace, Bunseki Kagaku, 33: 410-412.
84GOL	01	S. S. Goldich (1984) Determination of Ferrous Iron in Silicate Rocks, Chemical Geology, 42: 343-347.
84GRE	01	R. J. Green and C. J. Asher (1984) Measurement of Sub-microgram Amounts of Nickel in Plant Material by Electrothermal Atomic Absorption Spectroscopy, Analyst, 109: 503-505.
84HAN	01	A. L. Hanson, H. W. Kraner, R. E. Shroy, and K. Jones (1984) Measurement of the Fluorine Content of Three NBS Standard Reference Materials by use of the F-19(P,P'gamma)F-19 Reaction, Nuclear Instruments and Methods in Physical Research, 232: 401-403.
84HAR	01	J. M. Harnly and J. S. Kane (1984) Optimization of Electrothermal Atomization Parameters for Simultaneous Multielement Atomic Absorption Spectrometry, Anaytical Chemistry, 56: 48-54.
84HAR	02	J. M. Harnly, N. Miller-Ihli, and T. O'Haver (1984) Simultaneous Multielement Atomic Absorption Spectrometry with Graphite Furnace Atomization, Spectrochimica Acta, 39B: 305-320.
84HEA	01	J. B. Headridge and I. M. Riddington (1984) Determination of Silver, Lead, and Bismuth in Glasses by Atomic Absorption Spectrometry with Introduction of Solid Samples into Furnaces, Analyst, 109: 113-118.
84HER	01	J. L. Hern (1984) Determination of Total Sulfur in Plant Materials using an Automated Sulfur Analyzer, Communications in Soil Science and Plant Analysis, 15: 99-107.
84HIG	01	M. D. Higgins (1984) Abundance of Boron in International Geochemical Standards by Prompt-gamma Neutron Activation Analysis, Geostandards Newsletter, 8: 31-34.
84HIL	01	L. R. Hilpert, G. D. Bryd, and C. R. Vogt (1984) Selectivity of Negative Ion Chemical Ionization Mass Spectrometry for Benzo[a]pyrene, Analytical Chemistry, 56: 1842-1846.
84HIR	01	S. Hirata (1984) Simultaneous Determination of Multielement in Standard Silicate Rocks and Sediments by Inductively Coupled Plasma Atomic Emission Spectrometry, Bunseki Kagaku, 33: T66-T68.
84HIR	02	K. Hirayama and N. Unohara (1984) A New Sensitive Catalytic Method for Determination of Ultratrace Manganese(II) based on Oxidation of N,N-Diethyl-Aniline by Potassium Periodate, Bunseki Kagaku, 33: E517.
84HOF	01	D. Hoffer, I. B. Brenner, and L. Halicz (1984) Application of an Argon ICP for the Analysis of the Major and Minor Elements in Phosphate Rocks and Related Minerals, ICP Information Newsletter, 9: 494-509.
84HUD	01	V. Hudnik, M. Marolt-Gomiscek, and S. Gomiscek (1984) The Determination of Trace Metals in Human Fluids and Tissues: Part 1, Estimation of "Normal Values" for Copper, Zinc, Cadmium, and Manganese in Blood Serum and Liver Tissue, Analytica Chimica Acta, 157: 143-150.

CODE	N	REFERENCE
84HUD	03	V. Hudnik, M. Marolt-Gomiscek, and S. Gomiscek (1984) The Determination of Trace Metals in Human Fluids and Tissues: Part 2, The Homogeneity of Liver Tissue for Sampling, Analytica Chimica Acta, 157: 183-186.
84IKE	01	M. Ikeda, F. Nakata, H. Matsuo, and T. Kumamaru (1984) Suction-flow Hydride Generation-Heated Quartz Cell Atomic Absorption Spectrometry of Arsenic (III, V) by Utilizing Sensitivity Enhancement Effect of Air Introduction, Bunseki Kagaku, 33: 417-420.
84IMA	01	N. Imai, S. Terashima, and A. Ando (1984) Determination of Selenium in Twenty-eight Geological Reference Materials by Atomic Absorption Spectrometry, Geostandards Newsletter, 8: 39-41.
84IMA	02	K. Imaeda, Y. Kuwagaki, K. Ohsawa, M. Sano, T. Yokoyama, T. Tsutsumi, Y. Ohtani, K. Tamura, and A. Yokota (1984) Determination of Zinc, Copper, Iron, Calcium, and Manganese in Human Placenta by Acid Extraction-Atomic Absorption Spectrometry, Bunseki Kagaku, 33: T103-T107.
84IMA	03	N. Imai, S. Terashima, and A. Ando (1984) Determination of Selenium in Geological Materials by Automated Hydride Generation and Electrothermal Atomic Absorption Spectrometry, Bunseki Kagaku, 33: 290.
84JAC	01	L. L. Jackson, E. E. Engleman, and J. L. Peard (1984) Determination of Total Sulfur in Lichens by Combustion-Infrared Analysis, U. S. Geological Survey Open-File Report 84-656.
84JEN	01	B. B. Jensen, J. N. Marcussen, and N. Pind (1984) Software Package for Quantitative Analysis of Solid Materials by Energy-dispersive X-ray Fluorescence Spectrometry Without Absolute Calibration, Analytica Chimica Acta, 161: 175-18?.
84JEN	02	D. R. Jenke (1984) Analytical and Sampling Methodology used for Determining the Impact of a MHD Test Facility, Analytical Letters, 17: 735-755.
84KAM	01	E. Kamata, R. Nakashima, and S. Shibata (1984) Determination of Chromium in Coal Ash by Atomic Absorption Spectrometry after Wet Digestion, Bunseki Kagaku, 33: 177.
84KAN	01	R. Kanipayor, D. Narajit, B. Radziuk, and J. C. van Loon (1984), Direct Analysis of Solids for Trace Elements by Combined Electrothermal Furnace/Quartz T-tube/Flame Atomic Absorption Spectrometry, Analytica Chimica Acta, 166: 39-49.
84KAT	01	T. Katami, T. Hayakawa, M. Furukawa, and S. Shibata (1984) Extraction and Spectrophotometric Determination of Nickel in Coal Fly Ashes and Stack Gas using 2-[2-(3,5-dibropyridyl) azo]-5-dimethylaminobenzoic Acid, Analyst, 109: 731-733.
84KAU	01	H. C. Kaufmann and J. Steenblik (1984) Thick Target Elemental Analysis of Organic and Inorganic Materials by PIXE using Thin Film Standards, Nuclear Instruments and Methods in Physics Research, 231: 198-202.
84KEL	01	W. R. Kelly and P. J. Paulsen (1984) Precise and Accurate Determination of High Concentrations of Sulphur by Isotope-dilution Thermal-ionization Mass Spectrometry, Talanta, 31: 1063-1068.
84KNA	01	G. Knapp (1984) Der Weg zu leistungsfahigen Mathoden der Elementspurenanalyse in Umweltproben, Fresenius Zeitschrift fur Analytische Chemie, 317: 213-219.
84KRI	01	K. V. Krishnamurty and M. M. Kellogg (1984) Interlaboratory Comparison of Alfalfa as a Vegetation Standard in Chemical and Radiochemical Analysis, Proceeding of the 30th Annual Conference on Bioassay, Analytical and Environmental Chemistry, Cincinnati, Ohio.
84KUB	01	T. Kubota, T. Ueda, and T. Okutani (1984) Determination of Phosphorus by Atomic Absorption Spectrometry using a Zirconium Treated Graphite Tube, Bunseki Kagaku, 33: 637.
84KUL	01	I. Kuleff, R. Djingova, and I. Penev (1984) Analysis of Ancient and Medieval Glasses by INAA, Journal of Radioanalytical and Nuclear Chemistry, 83: 333-343.
84KUM	01	T. Kumamaru, F. Nakata, S. Hara, H. Matsuo, and M. Kiboku (1984), Atomic Absorption Spectrometry of Lead by Suction Flow Hydride Generation-Heated Quartz Cell Atomization, Bunseki Kagaku, 33: 626.
84KUR	01	U. Kurfurst, H. H. Grobecker, and M. Stoeppler (1984) Homogeneity Studies in Biological Reference and Control Materials with Solid Sampling and Direct Zeeman-AAS, in 84BRA 02, pp. 591-601.
84KYL	01	P. R. Kyle (1984) Written Communication, Department of Geoscience, New Mexico Institute of Mining and Technology, Socorro, New Mexico.
84LAN	01	S. Landsberger and E. Hoffman (1984) Rapid Determination of Selenium in Various Marine Species by Instrumental Neutron Activation Analysis, Journal of Radioanalytical and Nuclear Chemistry, 87: 41-50.
84LAN	02	S. Landsberger, A. Giovagnoli, J.-L. Debrun, and P. Albert (1984), Sulphur Determination in Coal by Proton Activation Analysis, International Journal of Environmental Analytical Chemistry, 16: 295-303.
84LAU	01	O.-W. Lau, P.-K. Hon, C.-Y. Cheung, and M.-C. Wong (1984) Uses of Silica Cells for the Static Cold Vapour Atomic Absorption Determination of Mercury Without Background Correction, Analyst, 109: 1175-1178.
84LEC	02	LECO Corporation (1984) The LECO SC-32, SC-132, and SC-232 Determine Sulfur in ..., Applications Note 5M-SPG-10/84-12MTD.
84LEW	01	S. A. Lewis, T. C. O'Haver, and J. M. Harnly (1984) Analysis of Blood Serum for Essential Metals by Simultaneous Multielement Atomic Absorption Spectrometry with Flame Atomization, Analytical Chemistry, 56: 1066.
84LIE	01	I. Liem, G. Kaiser, and M. Sager (1984) The Determination of Thallium in Rocks and Biological Materials with ng/g Levels by Differential-Pulse Anodic Stripping Voltammetry and Electrothermal Atomic Absorption Spectrometry, Analytica Chimica Acta, 158: 179-197.
84LIN	01	S.-W. Lin and K. Julshamn (1984) A Comparative Study of the Determination of Phosphorus by Electrothermal Atomic Absorption Spectrometry and Solution Spectrophotometry, Analytica Chimica Acta, 158: 199.
84LIV	01	R. R. Liversage, J. C. van Loon, and J. C. De Andrade (1984) A Flow Injection - Hydride Generation System of the Determination of Arsenic by Inductively Coupled Plasma Atomic Emission Spectrometry, Analytica Chimica Acta, 161: 275-283.

CODE N REFERENCE

84LOC 01 C. Locatelli, F. Fagioli, C. Bighi, and L. Scanavini (1984) Simultaneous Determination of Trace Metals in Vegetable Materials by Alternating Current Anodic Stripping Voltammetry and Atomic Absorption Spectroscopy, in 84BRA 02, pp. 529-535.

84LON 01 J. Long-zhu (1984) Determination of Trace Tin in River Sediment and Coal Fly Ash by Graphite Furnace Atomic Absorption Spectrometry using a Mixture of Ascorbic Acid and Iron as a Matrix Modifier, Atomic Spectroscopy, 5: 91-95.

84LUN 01 E. Lundberg, W. Frech, and I. Lindberg (1984) Determination of Lead in Biological Materials by Constant Temperature Electrothermal Atomic Absorption Spectrometry, Analytica Chimica Acta, 160: 205-215.

84MAR 01 D. B. Martin and W. A. Hartman (1984) Arsenic, Cadmium, Lead, Mercury, and Selenium in Sediments of Riverine and Pothole Wetlands of the North Central US, Journal of the Association of Official Analytical Chemists, 67: 1141-1144.

84MAT 01 K. Matsumoto, T. Ishiwatari, and K. Fuwa (1984) Hydride Generation and Atomic Emission Spectrometry with Helium Glow Discharge for Analysis of Biological Samples, Analytical Chemistry, 56: 1545-1548.

84MAY 01 W. E. May and S. A. Wise (1984) Liquid Chromatographic Determination of Polycyclic Aromatic Hydrocarbons in Air Particulate Extracts, Analytical Chemistry, 56: 225-232.

84MCA 01 J. M. McArthur and J. N. Walsh (1984) Rare-Earth Geochemistry of Phosphorites, Chemical Geology, 47: 191-220.

84MEL 01 R. A. Mellor (1984) Private Communication; quoted in 84KRI 01.

84MIA 01 Z. Mianzhi and R. M. Barnes (1984) Determination of Trace Elements in Serum using Inductively Coupled Plasma Atomic Spectroscopy with Hydride Generation and Chelating Resin Preconcentration, Applied Spectroscopy, 38: 635-639.

84MIL 01 N. J. Miller-Ihli, T. C. O'Haver, and J. M. Harnly (1984) Staircase Modulation Wave Form for Continuum Source Atomic Absorption Spectrometry, Analytical Chemistry, 56: 176-181.

84MOK 01 W. M. Mok and C. M. Wai (1984) Preconcentration with Dithiocarbamate Extraction for Determination of Molybdenum in Sea Water by Neutron Activation Analysis, Analytical Chemistry, 56: 27-29.

84MOK 02 W. M. Mok, H. Wilmes, and C. M. Wai (1984) Solvent Extraction of Molybdenum from Biological Samples and from Coal Fly Ash for Neutron Activation Analysis, Analytical Chemistry, 56: 2623-2624.

84MOR 01 M. Morita, T. Uehiro, and K. Fuwa (1984) Determination of Sulfur in Biological Samples by Vacuum Ultraviolet Inductively Coupled Plasma Atomic Emission Spectrometry, Analytica Chimica Acta, 166: 283-288.

84NAD 01 R. A. Nadkarni (1984) Applications of Microwave Oven Sample Dissolution in Analysis, Analytical Chemistry, 56: 2233-2237.

CODE N REFERENCE

84NAD 02 R. A. Nadkarni and R. I. Botto (1984) Determination of Germanium in Coal Ashes by Inductively Coupled Plasma Atomic Emission Spectrometry, Applied Spectrometry, 38: 595-598.

84NAG 01 Y. Nagaosa and K. Kobayshi (1984) Differential Pulse Polarographic Determination of Molybdenum after Separation by 8-Hydroxyquinoline Extraction into Dichloromethane, Talanta, 31: 593-596.

84NAK 01 R. Nakashima, E. Kamata, and S. Shibata (1984) Atomic Absorption Spectrometric Determination of Trace Elements in Coal by using an Acid Digestion in Sealed Polytetrafluoroethylene Vessel, Bunseki Kagaku, 33: E343.

84NAR 01 H. Narasaki and M. Ikeda (1984) Automated Determination of Arsenic and Selenium by Atomic Absorption Spectrometry with Hydride Generation, Analytical Chemistry, 56: 2059-2063.

84NAR 02 D. A. Naranjit, B. Radziuk, and J. C. Van Loon (1984) A Zeeman-effect Based Scatter Correction System for Non-dispersive Atomic Fluorescence Spectrometry, Spectrochimica Acta, 39B: 969-977.

84NDI 01 L. Ndiokwere (1984) Determination of Constituent Elements in some Nigerial Medicinal Plants by Thermal Neutron Activation Analysis, Journal of Radioanalytical and Nuclear Chemistry, 85: 325.

84ODD 01 M. Oddone, S. Meloni, and N. Genova (1984) Neutron Activation Analysis: A Powerful Tool for Assay of Rare-earth Elements in Terrestrial Materials, Inorganica Chimica Acta, 94: 283-290.

84OGU 01 K. Oguma, S. Ishino, and R. Kuroda (1984) Spectrophotometric Determination of Calcium in Silicate Rocks, Bunseki Kagaku, 33: 284.

84OHL 01 K. Ohls (1984) Die Bestimmung kleiner Cadmium-Anteile in verschiedenen Materialien durch Festprobeneinsatz bei ICP-und flammenloser Atomabsorptionsspektrometrie, Spectrochimica Acta, 39B:1105.

84OST 01 P. Ostapczuk, M. Goedde, M. Stoeppler, and H. Nurnberg (1984), Kontroll-und Routinebestimmung von Zn, Cd, Pb, Cu, Ni, und Co mit Differentieller Pulsvoltammetrie in Materialien des Deutschen Unweltprobenbank, Fresenius Zeitschrift fur Analytische Chemie, 317: 252-256.

84PIN 01 N. Pind (1984) Standard-addition Procedure for the Determination of Traces of Lead in Solid Samples by X-ray Fluorescence Spectrometry, Talanta, 31: 1118-1120.

84PLS 01 E. Plsko and J. Kubova (1984) Ein Korrektur-Verfahren zur Spektrographischen Bestimmung von Vanadin in Karbonatgesteinen, Spectrochimica Acta, 39B: 1483-1485.

84PRI 01 M. W. Pritchard and J. Lee (1984) Simultaneous Determination of Boron, Phosphorus, and Sulfur in some Biological and Soil Materials by Inductively Coupled Plasma Emission Spectrometry, Analytica Chimica Acta, 157: 313-326.

84RAB 01 M. Rabinowitz and H. Finch (1984) Cadmium Content of Umbilical Cord Blood, Environmental Research, 34: 120-122.

CODE	N	REFERENCE
84RIC	01	T. D. Rice, V. Sweeney, R. Semitekolos, and G. Rhyder (1984) Standard-addition Determination of Nitrogen in Coal with an Ammonia-sensitive Electrode, Talanta, 31: 607-610.
84RIN	01	O. Ringdal, K. Julshamn, K. Andersen, and E. Svendsen (1984) Determination of Selenium in Human Tissue Samples using Graphite Furnace Atomic Absorption Spectrometry based on Zeeman Effect Background Correction, 84BRA 02, pp. 189-199.
84ROS	01	A. Rosopulo, K. H. Grobecker, and U. Kurfurst (1984) Unterschungen uber die Schwermetallanalyse in Feststoffen mit der direkten Zeeman-Atom-Absorptionspektroskopie Fresenius Zeitschrift fur Analytische Chemie, 319: 540-546.
84ROS	03	G. Rosner, K. Bunzl, H. Hotzl, and R. Winkler (1984) Low Level Measurements of Natural Radionuclides in Soil Samples around a Coal-fired Power Plant, Nuclear Instruments and Methods in Physics Research, 223: 585-589.
84ROU	01	M. Rousseau, C. Friedli, and P. Lerch (1984) Trace Determination of Sulfur by Heavy Ion Activation Analysis, Analytical Chemistry, 56: 2854-2856.
84SAT	01	T. Sato (1984) The Determination of Zirconium in Biological Materials by Photon Activation Analysis, Journal of Radioanalytical and Nuclear Chemistry, 86: 141-150.
84SAT	02	C. Sato and M. Taga (1984) Separation and Concentration of Trace Heavy Metals in Foods with Chelating Resin, Bunseki Kagaku, 33: 500-503.
84SCH	01	H. Schinkel (1984) Bestimmung von Calcium, Magnesium, Strontium, Kalium, Natrium, Lithium, Eisen, Mangan, Chrom, Nickel, Kupfer, Cobalt, Zink und Cadmium. Eine Universalvorschrift zur Untersuchung von Wassern, Kohlen, Aschen, Schlacken, Erzen, Gesteinen, Baustoffen, Metallen, und ahnlichen Proben, Fresenius Zeitschrift fur Analytische Chemie, 317: 10-26.
84SCH	03	F. Schlieckmann and F. Umland (1984) Ein Neuartiges Effizientes Aufschlussverfahren fur die Multielementbestimmung von Schwermetallen in Luftstauben, Fresenius Zeitschrift fur Analytische Chemie, 318: 495-497.
84SCH	04	H. Schelhorn and M. Geisler (1984) Zum Einstaz von Radiotracern zur Ausbeutebestimmung in der Neutronenaktivierungsanalyze, Journal of Radioanalytical and Nuclear Chemistry, 83: 5-11.
84SHI	01	J. Shida, Y. Takahashi, and K. Ojima (1984) Flotation-spectrophotometric Determination of Germanium with Phenylfluorone in Coal Fly Ash, Bunseki Kagaku, 33: E143.
84SIL	01	D. Silberman and W. R. Harris (1984) Determination of Arsenic(III) and Arsenic(V) in Coal and Oil Fly Ashes, International Journal of Environmental Analytical Chemistry, 17: 73-83.
84SIM	01	M. Simonoff, Y. Llabador, C. Hamon, and G. Simonoff (1984) Extraction Procedure for the Determination of Trace Chromium in Plasma by Proton-induced X-ray Emission Spectrometry, Analytical Chemistry, 56: 454-457.
84SIM	02	M. Simonoff, Y. Llabador, G. Simonoff, P. Besse, and C. Conri (1984), Cineangiographically Determined Coronary Artery Disease and Plasma Chromium Levels for 150 Subjects, Nuclear Instruments and Methods, 231: 368-372.
84SIM	03	W. J. Simonsick and R. A. Hites (1984) Analysis of Isomeric Polycyclic Aromatic Hydrocarbons in Charge-Exchange Chemical Ionization Mass Spectrometry, Analytical Chemistry, 56: 2749-2754.
84SIU	01	K. W. M. Siu and S. S. Berman (1984) Comparison of Two Digestion Methods used in the Determination of Selenium in Marine Biological Tissues by Gas Chromatography with Electron-capture Detection, Talanta, 31: 1010-1012.
84SLA	02	W. Slavin and G. R. Carnrick (1984) The Possibility of Standardless Furnace Atomic Absorption Spectroscopy, Spectrochimica Acta, 398: 271-282.
84SNE	01	J. Sneddon and V. A. Fuavao (1984) Observations on a Matrix Interference in the Measurement of Lead by D. C. Argon Plasma Emission Spectroscopy, Atomic Spectroscopy, 5: 108.
84SOB	01	C. B. Sobel (1984) Automatic Simultaneous Multielement Analysis of Microvolume Samples with an Inductively Coupled Plasma Source, Applied Spectroscopy, 38: 444-447.
84STO	01	M. Stoeppler (1984) Bedeutung von Umweltprobenbanken-Anorganisch-Analytische Aufhabenstellungen und erste Ergebnisse des Deutschen Umweltprobenbankprogramms, Fresenius Zeitschrift fur Analytische Chemie, 317: 228-235.
84SUN	01	J. F. C. Sung, A. E. Nevissi, and F. B. Dewalle (1984) Simple Sample Digestion of Sewage and Sludge for Multielement Analysis, Journal of Environmental Science and Health, A19: 959-972.
84SUZ	01	N. Suzuki, S. Nakamura, and H. Imura (1984) Substoichiometric Determination of Manganese in a Synergistic Extraction System and its Application to the Analysis of Biological Materials, Journal of Radioanalytical and Nuclear Chemistry, 81: 37-48.
84SUZ	02	S. Suzuki and S. Hirai (1984) Activation Analysis of Trace Elements in Coal and Fly Ash by Low Energy Photon Spectrometry, Bunseki Kagaku, 33: 197.
84SUZ	03	H. Suzuki, H. Minami, K. Abe, H. Hiraiwa, and T. Uchida (1984), Comparison of Sample Decomposition Methods for Atomic Absorption Spectrometry of Eight Elements in Chinese Cabbage, Bunseki Kagaku, 33: T-9.
84TAK	01	Y. Takahasmi and M. Rey (1984) A Dedicated XRF Analyzer for Sulfur in Oils, International Laboratory, 14 (1): 84-93.
84TER	01	S. Terashima (1984) Determination of Cadmium and Lead in Seventy-seven Geological Reference Samples by Atomic Absorption Spectrometry, Geostandards Newsletter, 8: 13-16.
84TER	02	S. Terashima (1984) Determination of Bismuth in Geological Materials by Automated Hydride Generation and Electrothermal Atomic Absorption Spectrometry, Analytica Chimica Acta, 156: 301.
84TER	03	S. Terashima (1984) Determination of Bismuth in Eighty-three Geochemical Reference Samples by Atomic Absorption Spectrometry, Geostandards Newsletter, 8: 155-158.

CODE	N	REFERENCE
84TER	04	S. Terashima (1984) Determination of Arsenic and Antimony in Geological Materials by Automated Hydride Generation and Electrothermal Atomic Absorption Spectrometry, Bunseki Kagaku, 33: 561-563.
84TJI	01	P. S. Tjioe, K. Volkers, J. Kroon, J. de Goeij, and S. The (1984), Determination of Gold and Platinum Traces in Biological Materials as a Part of a Multielement Radiochemical Activation Analysis System, International Journal of Environmental Analytical Chemistry, 17: 13-24.
84TU	01	S.-D. Tu and K. H. Lieser (1984) Multielement Analysis of Chinese Biological Standard Reference Material by Monostandard Instrumental Neutron Activation Analysis, Journal of Radioanalytical and Nuclear Chemistry, 81: 345-352.
84TU	03	S.-D. Tu, W. Hanf, and K. H. Lieser (1984) Monostandard Instrumental Neutron Activation Analysis of Chinese Biological Standard Reference Material Using Short-lived Radionuclides, Journal of Radioanalytical and Nuclear Chemistry, 83: 283-290.
84URA	01	I. T. Urasa (1984) Determination of Arsenic, Boron, Carbon, Phosphorus, Selenium, and Silicon in Natural Waters by Direct Current Plasma Atomic Emission Spectrometry, Analytical Chemistry, 56: 904-908.
84VOS	01	L. Vos and R. van Grieken (1984) Preparation of Conducting Electrodes from Biological Samples for Multielement Trace Analysis by Spark-source Mass Spectrometry or Emission Spectrometry, Analytica Chimica Acta, 164: 83-90.
84WEB	01	H. T. Weber, J. van Willigen, and W. van der Linden (1984) Determination of Total Sulfur in Coal by X-ray Fluorescence Spectrometry, Analytica Chimica Acta, 160: 271-275.
84WOL	01	A. Wolf, P. Schramel, G. Lill, and H. Hohn (1984) Bestimmung von Spurenelementen in Moos-und Bodenproben zur Untersuchung der Eignung als Indicatoren fur Umweltbelastungen, Fresenius Zeitschrift fur Analytische Chemie, 317: 512-519.
84WOL	02	K. A. Wolnik, F. Fricke and C. M. Gaston (1984) Quality Assurance in the Elemental Analysis of Foods by Inductively Coupled Plasma Spectroscopy, Spectrochimica Acta, 398: 649-655.
84XIA	01	S. Xiao-quan, N. Zhe-ming, and Z. Li (1984) Use of Arsenic Resonance Line of 197.2 nm and Matrix Modification for Determination of Arsenic in Environmental Samples by Graphite Furnace Atomic Absorption Spectrometry using Palladium as a Matrix Modifier, Atomic Spectroscopy, 5: 1-4.
84YAM	01	M. Yamamoto, Y. Yamamoto, and T. Yamashige (1984) Elimination of Metal Interferences in the Hydride Generation Atomic Absorption Spectrometry of Arsenic using Sodium Tetrahydroborate(III) Solution, Analyst, 109: 1461-1463.
84ZER	01	M. Zerezghi, K. C. Ng, and J. A. Caruso (1984) Simultaneous Multielement Determination by Inductively Coupled Plasma-Rapid Scanning Atomic Emission Spectrometry, Analyst, 109: 589-592.
84ZIC	01	Z. Zichao, M. Guogan, and L. Huaquin (1984) The Chronometric Age of the Sinian Cambrian Boundary in the Yangtze Platform, China, Geological Magazine, 121: 175-178.
84ZSO	01	I. M. Zsolnay, J. M. Brauer, and S. A. Sojka (1984) X-ray Fluorescence Determination of Trace Elements in Soil, Analytica Chimica Acta, 162: 423-426.
85ABD	01	M. Abdullah and H. Haraguchi (1985) Computer-controlled Graphite Cup Direct Insertion Device for Direct Analysis of Plant Samples by Inductively Coupled Plasma Atomic Emission Spectrometry, Analytical Chemistry, 57: 2059.
85ADE	01	S. B. Adeloju, A. M. Bond, and M. H. Briggs (1985) Multielement Determination in Biological Materials by Differential Pulse Voltammetry, Analytical Chemistry, 57: 1386-1390.
85ADE	02	S. B. Adeloju and A. M. Bond (1985) Influence of Laboratory Environment on the Precision and Accuracy of Trace Element Analysis, Analytical Chemistry, 57: 1728-1733.
85AKA	01	M. S. Akanni and V. O. Ogugbuaja (1985) Multielement Analysis of Nigerian Traditional (Black) Soaps Journal of Radioanalytical and Nuclear Chemistry, 91: 395.
85AND	01	D. L. Anderson, Y. Sun, M. Failey, and W. Zoller (1985) Neutron-capture Prompt Gamma-ray Multielement Analysis of Twenty-two Geochemical Reference Standards, Geostandards Newsletter, 9: 219-228.
85AVA	01	L. Avaldi, C. Bui, and M. Milazzo (1985) The Problem of Irradiation and Detection Angles in Quantitative XRF Analysis, X-ray Spectrometry, 14: 159-163.
85BAR	01	U. Bartels (1985) Uber die Anwendung von Ascorbinsaure und Thioglykolsaure zur Beseitigung der Storungen durch dreiwertiges Eisen bei der photometrischen Bestimmung von Aluminium mit Aluminon in Pflanzen, Fresenius Zeitschrift fur Analytische Chemie, 320: 56-57.
85BEL	01	L. F. Bellido and B. de C. Arezzo (1985) Uranium and Thorium Determination in Brazilian Coals by Epithermal Neutron Activation Analysis, Journal of Radioanalytical and Nuclear Chemistry, 92: 151-158.
85BEM	01	H. Bem and D. E. Ryan (1985) Determination of Palladium in Different Samples by Neutron Activation after Selective Preconcentration with Alpha-benzildioxime, Analytica Chimica Acta, 169: 79-85
85BON	01	A. M. Bond and Y. Nagaosa (1985) Determination of Aluminium, Copper, Iron, and Manganese in Biological and Other Samples as 8-Quinolinol Complexes by High-Performance Liquid Chromatography with Electrochemical and Spectrophotometric Detection, Analytica Chimica Acta, 178: 197-208.
85BRE	01	S. W. Brewer and R. D. Sacks (1985) Preconcentration of Cadmium from Highly Acidic Saline Solutions and Direct Determination of Bismuth, Cadmium, Mercury, Antimony, Tin, and Thallium in Highly Acidic Solutions with Electrically Vaporized Thin Gold Film Atomic Emission Spectrometry, Analytical Chemistry, 57: 724-729.
85BRO	01	R. R. Brooks and S. D. Naidu (1985) The Determination of Gold in Vegetation by Electrothermal Atomic Absorption Spectrometry, Analytica Chimica Acta, 170: 325-329.

CODE N	REFERENCE
85BYE 01	R. Bye and W. Lund (1985) Determination of Selenium in Biological Samples by Electrothermal Preconcentration and Atomic Absorption Spectrometry, Fresenius Zeitschrift fur Analytische Chemie, 321: 483-484.
85CAN 01	M. C. Cantone, N. Molho, and L. Pirola (1985) Cadmium and Titanium in Human Serum Determined by Proton Nuclear Activation, Journal of Radioanalytical and Nuclear Chemistry, 91: 197-203.
85CAR 01	E. E. Cary (1985) Electrothermal Atomic Absorption Spectroscopic Determination of Chromium in Plant Tissues: Interlaboratory Study, Journal of the Association of Official Analytical Chemists, 68: 495.
85CAR 02	J. Carroll, N. Miller-Ihli, J. Harnley, D. Littlejohn, J. Ottaway, and T. O'Haver (1985), Simultaneous Multielement Analysis by Continuum Source Atomic Absorption Spectrometry with Graphite Probe Electrothermal Atomisation, Analyst, 110: 1153-1158.
85CHA 01	C. C. Y. Chan (1985) Semiautomated Method for Determination of Selenium in Geological Materials using a Flow Injection Analysis Technique, Analytical Chemistry, 57: 1482-1485.
85CLA 01	E. Clayton and K. K. Woller (1985) Sample Preparation and System Calibration for Proton-Induced X-ray Emission Analysis of Hair from Occupationally Exposed Workers, Analytical Chemistry, 57: 1075-1079.
85CLA 02	E. Clayton and L. S. Dale (1985) Determination of Fluorine in NBS Coal and Coal Fly Ash by Proton Induced Gamma Ray Emission and Spark Source Mass Spectrometry, Analytical Letters, 18: 1533-1538.
85COE 01	W. Coerdt and E. Mainka (1985) Versuche zur Goldbestimmung in Boden-und Staubfilterproben, Fresenius Zeitschrift fur Analytische Chemie, 320: 656.
85COE 02	P. P. Coetzee and K. H. Lieser (1985) Multielement Analysis by Energy-dispersive X-ray Fluorescence using a Single Calibration Procedure, Requiring One or Two Standards, Fresenius Zeitschrift fur Analytische Chemie, 322: 386-390.
85COX 01	A. G. Cox, I. G. Cook, and C. W. McLeod (1985) Rapid Sequential Determination of Chromium (III) - Chromium (VI) by Flow Injection Analysis - Inductively Coupled Plasma Atomic Emission Spectrometry, Analyst, 110: 331-333.
85CUT 01	G. A. Cutter (1985) Determination of Selenium Speciation in Biogenic Particles and Sediments, Analytical Chemistry, 57: 2951-2955.
85DAT 01	A. R. Date and A. L. Gray (1985) Determination of Trace Elements in Geological Samples by Inductively Coupled Plasma Source Mass Spectrometry, Spectrochimica Acta, 40B: 115-122.
85DAV 01	L. A. Davis, R. J. Krupa, and J. D. Winefordner (1985) A Simple, Inexpensive Computer-controlled Slew-scan Atomic Fluorescence Flame Spectrometer for Multielement Determinations, Analytica Chimica Acta, 173: 51-62.
85DOU 01	J. P. Dougherty, R. G. Michel, and W. Slavin (1985) Precision Considerations in the Determination of Manganese in Mouse Brains by Furnace Atomic Absorption with Zeeman Background Correction, Analytical Letters, 18: 1231-1244.
85DUM 02	R. Dumarey, P. Verbiest, and R. Dams (1985) Optimization of a Wet Digestion Method for the Determination of Mercury in Coal Samples by Cold Vapor Atomic Absorption, Bulletin des Societes Chimiques Belges, 94: 351-357.
85DYB 01	R. Dybczynski, H. Maleszewska, and M. Wasek (1985) An Accurate Method for the Determination of Copper in Biological Materials by Neutron Activation Analysis and Extraction Chromatography, Journal of Radioanalytical and Nuclear Chemistry, 96: 187-200.
85ENG 01	E. E. Engleman, L. L. Jackson, and D. R. Norton (1985) Determination of Carbonate Carbon in Geological Materials by Coulometric Titration, Chemical Geology, 53: 125-128.
85EVA 01	W. H. Evans and J. I. Read (1985) Determination of Lithium, Rubidium, and Strontium in Foodstuffs, Analyst, 110: 619-623.
85EVA 02	W. H. Evans and D. Caughlin (1985) Evaluation of Methods for the Determination of Total Molybdenum and Vanadium in Foodstuffs Using Spectrophotometric Measurements, Analyst, 110: 681-687.
85FAB 01	J. L. Fabec and M. L. Ruschak (1985) Determination of Nickel, Vanadium, and Sulfur in Crudes and Heavy Crude Fractions by Inductively Coupled Argon Plasma Atomic Emission Spectrometry and Flame Atomic Absorption Spectrometry, Analytical Chemistry, 57: 1853-1863.
85FAN 01	Y. Fang, G. Wuer, and W. Fushen (1985) Zeeman Effect Electrothermal Atomic Absorption of Arsenic with Platinum as a Matrix Modifier, Analytical Letters, 18: 1245-1250.
85FAS 01	A. J. Faske, K. Snable, A. Boorn, and R. Browner (1985) Microliter Sample Introduction for ICP-AES, Applied Spectroscopy, 39: 542-545.
85FAS 02	J. D. Fassett and H. M. Kingston (1985) Determination of Nanogram Quantities of Vanadium in Biological Material by Isotope Dilution Thermal Ionization Mass Spectrometry with Ion Counting Detection, Analytical Chemistry, 57: 2474-2478.
85FEN 01	X. Feng and D. E. Ryan (1985) Neutron Activation Determination of Mercury in Waters after Preconcentration by Flotation of Dithizone-Mercury Complexes International Journal of Environmental Analytical Chemistry, 19: 272-280.
85FIL 01	R. H. Filby, S. Nguyen, C. Grimm, G. Markowski, V. Ekambaram T. Tanaka, and L. Grossman (1985), Evaluation of Geochemical Standard Reference Materials for Microanalysis, Analytical Chemistry, 57: 551-555.
85FIL 02	R. H. Filby, G. van Berkel, A. Bragg, A. Joubert, W. Robinson, and C. Grimm (1985), Evaluation of Residual Fuel Oil Standard Reference Materials as Trace Element Standards, Journal of Radioanalytical and Nuclear Chemistry, 91: 361-368.
85FLO 01	M. A. Floyd, A. Halouma, R. Morrow, and R. Farrar (1985) Rapid Multielement Analysis of Water Samples by Sequential ICP-AES, American Laboratory, 17(3): 84-92.
85FRI 01	C. Friedli, M. Rousseau, T. Diaco, and P. Lerch (1985) Dosage de traces de soufre et de beryllium par activation dans un faisceau d'oxygene-18, Analusis, 13: 176-180.

CODE	N	REFERENCE
85FUD	01	N. Fudagawa and A. Kawase (1985) Determination of Cadmium in Coal by Metal Furnace Atomic Absorption Spectrometry, Bunseki Kagaku, 34: 233.
85GAU	04	M. A. Gautier, E. S. Gladney, and D. R. Perrin (1985) Quality Assurance for Health and Environmental Chemistry 1984, Los Alamos National Laboratory report LA-10508-MS.
85GEN	01	C. A. Gent and S. A. Wilson (1985) The Determination of Sulfur and Chlorine in Coals and Oil Shales using Ion Chromatography, Analytical Letters, 18: 729-740.
85GLA	01	E. S. Gladney and N. W. Bower (1985) Determination of Elemental Composition of NBS 278 and NBS 688 via Neutron Activation and X-ray Fluorescence, Geostandards Newsletter, 9: 261-262.
85GLA	02	M. D. Glascock, W. Z. Tian, and W. D. Ehmann (1985) Utilization of a Boron Irradiation Vessel for NAA of Short Lived Radionuclides in Biological and Geological Materials, Journal of Radioanalytical and Nuclear Chemistry, 92: 379.
85GLA	03	E. S. Gladney, R. Raymond, and N. W. Bower (1985) Evaluation of the LECO SC-132 Sulfur Analyzer for the Determination of Sulfur in Coals and Peats, American Laboratory, 17(7): 34-38.
85GLA	04	E. S. Gladney (1985) Determination of Uranium in GSJ, CRPG, and CCRMP Reference Samples by Delayed Neutron Assay, Geostandards Newsletter, 9: 275-276.
85GLA	05	E. S. Gladney, D. B. Curtis, and D. R. Perrin (1985) Determination of Selected Rare Earth Elements in 37 International Geochemical Reference Materials by Instrumental Thermal Neutron Capture Prompt Gamma-ray Spectrometry, Geostandards Newsletter, 9: 25-30.
85GRE	01	R. C. Greaves, R. M. Barkley, and R. E. Sievers (1985) Rapid Sampling and Analysis of Volatile Constituents of Airborne Particulate Matter, Analytical Chemistry, 57: 2807.
85GRE	02	J. D. Greenough, S. R. McCutcheon, and V. S. Papezik (1985) Petrology and Geochemistry of Cambrian Volcanic Rocks from the Avalon Zone in New Brunswick, Canadian Journal of Earth Sciences, 22: 881-892.
85HAN	01	S. Hanamura, B. Kirsch, and J. D. Winefordner (1985) Determination of Trace Levels of Water in Solid Samples by Evolved Gas Analysis/Helium Microwave Plasma Emission Spectrometry, Analytical Chemistry, 57: 9-13.
85HAR	01	H. Haraguchi, M. Kurosawa, and Y. Iwata (1985) Simultaneous Multielement Analysis of Coals and Fly Ashes by Inductively Coupled Plasma Atomic Emission Spectrometry, Bunseki Kagaku, 34: 257.
85HAS	01	R. J. Haskell and J. C. Wright (1985) Determination of Rhenium at Ultratrace Levels by Selective Laser Excitation of Precipitates, Analytical Chemistry, 57: 332-336.
85HEE	01	S. S. Q. Hee, T. J. Macdonald, and J. R. Boyle (1985) Effects of Acid Type and Concentration on the Determination of 34 Elements by Simultaneous Inductively Coupled Plasma Atomic Emission Spectrometry, Analytical Chemistry, 57:1242
85HOL	01	J. Holzbecher, A. Chatt, D. E. Ryan (1985) SLOWPOKE Epi-cadmium Neutron Flux in Activation Analysis of Trace Elements, Canadian Journal of Spectroscopy, 30: 67-72.
85ICH	01	S. Ichinoki and M. Yamazaki (1985) Simultaneous Determination of Nickel, Lead, Zinc, and Copper in Citrus Leaves and Rice Flour by Liquid Chromatography with Hexamethylenedithiocarbamate Extraction, Analytical Chemistry, 57: 2219-2222.
85IKE	01	M. Ikeda (1985) Determination of Arsenic at the Picogram Level by Atomic Absorption Spectrophotometry with Miniaturized Suction-flow Hydride Generation, Analytica Chimica Acta, 167: 289-297.
85ISS	01	R. A. Issac and W. C. Johnson (1985) Elemental Analysis of Plant Tissue by Plasma Emission Spectroscopy: Collaborative Study, Journal of the Association of Official Analytical Chemists, 68: 499-504.
85JAC	01	L. L. Jackson, E. E. Engleman, and J. L. Peard (1985) Determination of Total Sulfur in Lichens and Plants by Combustion-Infrared Analysis, Environmental Science and Technology, 19: 437-441.
85JAI	01	D. D. Jaiswal, H. Dang, and C. Sunta (1985) Distribution of Thorium in Human Tissues, Journal of Radioanalytical and Nuclear Chemistry, 88: 225-229.
85JAR	02	I. Jarvis and K. E. Jarvis (1985) Rare-earth Element Geochemistry of Standard Sediments: A Study using Inductively Coupled Plasma Spectrometry, Chemical Geology, 53: 335-344.
85JON	01	J. W. Jones and T. C. O'Haver (1985) Effects of pH and Digestion Conditions on Chelex 100 Separation of Trace Elements from Tissue Digests Prior to ICP-AES Determination, Spectrochimica Acta, 40B: 263-277.
85JOS	01	S. R. Joshi (1985) Determination of Th-228, Th-230, and Th-232 in Sediments by Anion Exchange and Nuclear Spectrometry, Analytical Chemistry, 57: 1023-1026.
85KAT	01	T. Katami, T. Hayakawa, M. Furukawa, and S. Shibata (1985) Spectrophotometric Determination of Cobalt in Pepperbush Leaves and Coal Fly Ashes Using 2-(2-Benzothiazolylazo)-5-dimethylaminobenzoic Acid, Analyst, 110: 399-401.
85KAT	02	M. Katoh and K. Kudo (1985) Study on the Comparator Method using Substoichiometry, I. Principle, Journal of Radioanalytical and Nuclear Chemistry, 95: 55-62.
85KIM	01	M. M. Kimberly and D. C. Paschal (1985) Screening for Selected Toxic Elements in Urine by Sequential Scanning Inductively-coupled Plasma Emission Spectrometry, Analytica Chimica Acta, 174: 203-210.
85KOJ	01	I. Kojima, T. Uchida, C. Iida, and K. Goto (1985) Determination of the Absolute Mass of an Analyte by Flame Atomic Absorption Spectrometry with Discrete Nebulisation, Analyst, 110: 1161-1163.
85KUM	01	T. Kumamaru, Y. Nitta, F. Nakata, and H. Matsuo (1985) Determination of Cadmium by Suction-flow Liquid-liquid Extraction Combined with Inductively Coupled Plasma Atomic Emission Spectrometry, Analytica Chimica Acta, 174: 183-189.
85LAN	02	S. Landsberger, R. E. Jervis, and A. Balicki (1985) The Determination of Sulphur and Heavy Metals in Snow by Inductively Coupled Plasma Atomic Emission Spectrometry, International Journal of Environmental Analytical Chemistry, 19: 219-225.

CODE	N	REFERENCE
85LEP	01	E. A. Lepel and J. C. Laul (1985) Neutron Activation Analysis of NBS Oyster Tissue and IAEA Animal Bone, Proceedings of the 5th International Conference on Nuclear Methods in Environmental and Energy Research, Mayaguez, Puerto Rico.
85LIE	02	T. Liese (1985) Zur Bestimmung von Elementen in Pflanzen-und Bodenproben mittels ICP-AES, Fresenius Zeitschrift fur Analytische Chemie, 321: 37-44.
85LIN	01	P. C. Lindahl (1985) Electrically Heated Quartz Cell and Holder for an Atomic Absorption Hydride Generation System, Atomic Spectrometry, 6: 123-124.
85LIN	02	P. C. Lindahl (1985) Determination of Arsenic and Selenium in Coal by Hydride Generation/Atomic Absorption Spectrophotometry -- An Inter-laboratory Evaluation of a Proposed Standard Test Method, Argonne National Laboratory report ANL/ACL-85-3.
85LON	01	J. Long-zhu and N. Zhe-ming (1985) Determination of Nickel in Urine and Other Biological Samples by Graphite Furnace Atomic Absorption Spectrometry, Fresenius Zeitschrift fur Analytische Chemie, 321: 72-76.
85LYO	01	D. J. Lyons, K. P. Spann, and R. L. Roofayel (1985) Determination of Total Calcium, Zinc, Manganese, Iron, Magnesium, and Phosphorus in Animal Feeds and Plant Material Using Inductively Coupled Plasma Emission Spectrometry, Analyst, 110: 955-957
85MAD	01	M. Madaro and A. Moaura (1985) Instrumental Neutron Activation Analysis Results in an Intercomparison Campaign on Lake and River Sediments, Journal of Radioanalytical and Nuclear Chemistry, 90:129-136
85MAS	01	K. Masumoto and M. Yagi (1985) Determination of Strontium in Biological Materials by Charged-Particle Activation Analysis using the Stable Isotope Dilution Method, Journal of Radioanalytical and Nuclear Chemistry, 91: 369-378.
85MCC	02	D. L. McCurdy, M. D. Wichman, and R. C. Fry (1985) Rapid Coal Analysis. Part II: Slurry Atomization DCP Emission Analysis of NBS Coal, Applied Spectroscopy, 39: 984-988.
85MEY	02	A. Meyer and R. Neeb (1985) Bestimmung von Cobalt und Nickel in einigen biologischen Matrices - Vergleich Chelat - Gas - Chromatographie und Adsorptions-Voltammetrie, Fresenius Zeitschrift fur Analytische Chemie, 321: 235-241.
85MIS	01	U. C. Mishra and G. N. Shaikh (1985) Determination of Trace Elements in Total Particulate Matter of Cigarette Smoke by Instrumental Neutron Activation Analysis, Journal of Radioanalytical and Nuclear Chemistry, 89: 545-552.
85NAD	01	R. A. Nadkarni, R. B. Cornett, and R. L. Bredeweg (1985) Evaluation of an Elemental Analyzer, American Laboratory, 17(2): 69-77.
85NAK	01	T. Nakahara and N. Kikui (1985) Determination of Trace Concentrations of Selenium by Continuous Hydride Generation-Inductively Coupled Plasma Atomic Emission Spectrometry, Spectrochimica Acta, 40B: 21.
85NAR	01	M. Narasaki (1985) Determination of Traces of Arsenic and Selenium by Hydride Generation - Atomic Absorption Spectrometry, Fresenius Zeitschrift fur Analytische Chemie, 321: 464-466.
85NAR	02	D. A. Naranjit, B. Radziuk, J. Rylaarsdam, P. Larkins, and J. van Loon (1985), A Microcomputer-controlled Simultaneous Multielement Nondispersive Atomic Fluorescence Spectrometer, Applied Spectroscopy, 39: 128-136.
85NAR	03	M. Narasaki (1985) Determination of Arsenic and Selenium in Fat Materials and Petroleum Products by Oxygen Bomb Combustion and Automated Atomic Absorption Spectrometry with Hydride Generation, Analytical Chemistry, 57: 2481-2486.
85NDI	01	C. L. Ndiokwere (1985) The Dispersal of Arsenic, Chromium, and Copper from a Wood Treatment Factory, and Their Effect on Soil, Vegetation, and Crops, Int. Journal of Environmental Studies, 24: 231-234.
85NG	01	R. C. Ng, H. Kaiser, and B. Meddings (1985) Low Power Torches for Organic Solvents in Inductively Coupled Plasma Emission Spectrometry, Spectrochimica Acta, 40B: 63-72.
85NIS	01	M. Nishikawa, Y. Ambe, and T. Mizoguchi (1985) Evaporation Preconcentration of Trace Elements in Rainwater for Inductively Coupled Plasma Emission Spectrometry, Bunseki Kagaku, 34: 664.
85OKA	02	K. Okamoto and K. Fuwa (1985) Mussel Tissue Powder, A Certified Reference Material, Analyst, 110: 785-788.
85OTT	01	M. Otto, W. Wegscheider, and E. P. Lankmayr (1985) Single- and Multi-channel Detection for Generalized Quantitative Analysis in Cases of Unresolved Chromatographic Peaks, Analytica Chimica Acta, 171: 13-31.
85PAR	01	C. J. Park (1985) A Feasibility Study of an ETV/ICP/MS System, Ph.D. Thesis, University of Toronto.
85PEA	01	W. C. Pearch, D. Thornewill, and J. H. Marston (1985) Multielement Analysis of Solutions of Coal Ash using Inductively Coupled Plasma Optical-emission Spectrometry, Analyst, 110: 625-629.
85PEN	01	I. Penev, I. Kuleff, and R. Djingova (1985) Simultaneous Activation Determination of Aluminium, Magnesium, and Silicon in Rocks, Glasses, and Pottery, Journal of Radioanalytical and Nuclear Chemistry, 96: 219.
85PIW	01	J. Piwonka, G. Kaiser, and G. Tolg (1985) Determination of Selenium at ng/g and pg/g Levels by Hydride Generation Atomic Absorption Spectrometry, in Biotic Materials, Fresenius Zeitschrift fur Analytische Chemie, 321: 225-234.
85POT	02	P. J. Potts, O. Thorpe, M. Isaacs, and N. Rodgers (1985) Instrumental Neutron Activation Analysis of Fourteen Carbonate Reference Materials from the NBS and George Frederic Smith and Eleven Industrial Geological Samples from the Bureau of Analyzed Samples, Geostandards Newsletter, 9: 173-179.
85POU	01	M. Pougnet, M. Orren, and L. Haraldsen (1985) Determination of Beryllium and Lithium in Coal Ash by Inductively Coupled Plasma Atomic Emission Spectroscopy, Int. Journal of Environmental Analytical Chemistry, 21: 213.

CODE N — REFERENCE

85RIC 01 T. D. Rice (1985)
Private Communication; taken from 85CLA 02.

85ROE 01 I. Roelandts, G. Robaye, G. Weber, and J. Delbrouck (1985)
Determination of Fluorine in Eighty International Geochemical Reference Samples by Proton Induced Gamma Ray Emission Spectrometry, Geostandards Newsletter, 9: 191-197.

85RUC 01 A. de Ruck and R. Dams (1985)
Determination of Thallium in Environmental Samples by Activation Analysis with Fast Reactor Neutrons, Journal of Radioanalytical and Nuclear Chemistry, 94: 87-94.

85SAI 01 K. Saitoh and N. Suzuki (1985)
High-Performance Liquid Chromatographic Determination of Nickel, Copper, and Zinc as their Tetraphenylporphine Chelates, Analytica Chimica Acta, 178: 169-177.

85SAK 01 T. Sakai, S. Hanamura, and J. D. Winefordner (1985)
Evolved-gas Zeeman Flame Atomic Absorption Spectrometry for the Determination of Arsenic Compounds, Analytica Chimica Acta, 170: 237-243.

85SAL 01 C. D. Salisbury and W. Chan (1985)
Simple Automated Wet Digestion of Animal Tissues for Determination of Seven Elements by Atomic Absorption Spectroscopy, Journal of the Association of Official Analytical Chemists, 68: 218-219.

85SAT 01 K. Sato and M. Sakata (1985)
Multielement Determination of Coal Ash by Inductively Coupled Plasma Atomic Emission Spectrometry, Bunseki Kagaku, 34: 275.

85SCH 01 W. Schindlmeier and K. Heumann (1985)
Iodspurenbestimmung in Lebensmittelproben durch massenspektrometrische Isotopenverdunnungsanalyse, Fresenius Zeitschrift fur Analytische Chemie, 320: 745-748.

85SCI 01 Sciex Corporation (1985)
Multielement Isotope Dilution Using the ELAN ICP/MS Elemental Analyzer, Sciex Application Note 00384E.

85SHI 01 J. Shida, M. Itoh, T. Ogata, and H. Kamada (1985)
Characterization of Manganese in Coal by Electron Spin Resonance, Bunseki Kagaku, 34: 247.

85SHI 02 J. Shida, H. Suzuki, and S. Abe (1985)
Spectrophotometric Determination of Boron in Plants after Separaton as Trimethyl Borate by Microdiffusion, Analytica Chimica Acta, 169: 349-353.

85SIM 01 M. Simonoff, Y. Llabador, G. Simonoff, M. Boisseau, and M. Roudaut (1985), PIXE Determination of Calcium in Red Blood Cells, Journal of Radioanalytical and Nuclear Chemistry, 94: 297-310.

85SUB 01 K. Subramanian, J. Meranger, C. Wan, and A. Corsini (1985)
Preconcentration of Cadmium, Chromium, Copper, and Lead in Drinking Water on the Polyacrylic Ester Resin, XAD-7, Int. J. Environmental Analytical Chemistry, 19: 261-272.

85SUN 01 J. X. Sun and R. E. Jervis (1985)
Neutron Activation Analysis of 35 Elements in Chinese Standard Rocks (GSR) and Soils (GSS) Using the Slowpoke Reactor, Journal of Radioanalytical and Nuclear Chemistry, 89: 553-560.

CODE N — REFERENCE

85TAN 01 J. T. Tanner, J. Smith, G. Angyal, P. Defibaugh, M. Bueno, and M. Villalobos (1985), National Bureau of Standards Reference Materials as Organic Nutrient Standards: A Preliminary Study, Journal of the Association of Official Analytical Chemists, 68: 1084-1086.

85TER 01 S. Terashima (1985)
Determination of Tin in Geological Materials by Atomic Absorption Spectrometry, Bulletin of the Geological Survey of Japan, 36: 375-383.

85TIA 01 W. Tian and W. D. Ehmann (1985)
Radiochemical Neutron Activation Analysis for Arsenic, Cadmium, Copper, and Molybdenum in Biological Matrices, Journal of Radioanalytical and Nuclear Chemistry, 89: 109.

85UTO 01 M. Uto, Y. Itoh, and M. Sugawara (1985)
Differential Pulse Polarographic Determination of Nickel(II) as Water-soluble Dithiocarbamate, Fresenius Zeitschrift fur Analytische Chemie, 321: 68-71.

85VEI 01 C. Veillion, S. Lewis, K. Patterson, W. Wolf, J. Harnly, J. Versieck, L. Vanballenberghe, R. Cornelis, and T. O'Haver (1985), Characterization of a Bovine Serum Reference Material for Major, Minor, and Trace Elements, Analytical Chemistry, 57: 2106-2109.

85VOG 01 J. R. Vogt and S. C. Schlegel (1985)
Elemental Determinations in NBS 1633A Fly Ash Standard Reference Material using INAA and PGNAA, Journal of Radioanalytical and Nuclear Chemistry, 88: 379-387.

85VOS 01 L. Vos and R. Van Greiken (1985)
Matrix Effects and Analysis of Biological Materials by Spark Source Mass Spectrometry, Fresenius Zeitschrift fur Analytische Chemie, 321: 32-36.

85WAH 01 S. Waheed, I. Fatima, A. Mannan, M. Chaudhary, and I. Qureshi (1985), Trace Element Concentration in Egg-yolk and Egg-white of Farm and Domestic Chicken Eggs, Int. J. Environmental Analytical Chemistry, 21: 333-344.

85WHI 01 D. Whitehead and J. E. Thomas (1985)
Use of a Nebulizer in Pyrohydrolic Decomposition of Silicate Materials for Determination of Fluorine and Chlorine, Analytical Chemistry, 57: 2421-2423.

85WHI 02 R. T. White and G. E. Douthit (1985)
Use of Microwave Oven and Nitric Acid-Hydrogen Peroxide Digestion to Prepare Botanical Materials for Elemental Analysis by Inductively Coupled Argon Plasma Emission Spectrometry, Journal of the Association of Official Analytical Chemists, 68: 766-769.

85WOL 01 K. A. Wolnik, J. Rader, C. Gaston, and F. Fricke (1985)
Development of Laboratory Control Samples for the ICP-ES Determination of Nutrient Elements in Rat Tissues, Spectrochimica Acta, 408: 245-251.

85WOO 01 I. H. Woo, H. Nishiyama, Y. Hashimoto, and Y. K. Lee (1985)
Determination of Selenium in Coal Using Graphite Furnace Atomic Absorption Spectrometry after Chemical Separation, Bunseki Kagaku, 34: 599.

85XIA 01 S. Xiao-quan, Y. Zhi-neng, and N. Zhe-ming (1985)
Determination of Gallium in Sediment, Coal, Coal Fly Ash, and Botanical Samples by Graphite Furnace Atomic Absorption Spectrometry using Nickel Matrix Modification, Analytical Chemistry, 57: 857-861.

CODE	N	REFERENCE
85X1A	02	S. Xiao-quan, N. Zhe-ming, and Y. Zhi-neng (1985) Determination of Indium in Minerals, River Sediments, and Coal Fly Ash by Electrothermal Atomic Absorption Spectrometry with Palladium as a Matrix Modifier, Analytica Chimica Acta, 171: 269-277.
85YAG	01	M. Yagi and K. Masumoto (1985) Stable-Isotope Dilution Activation Analysis for Special Samples in which the Self-shielding Effect is Negligible, Journal of Radioanalytical and Nuclear Chemistry, 90: 91-103
85YAM	01	M. Yamamoto, M. Yasuda, and Y. Yamamoto (1985) Hydride-Generation Atomic Absorption Spectrometry Coupled with Flow Injection Analysis, Analytical Chemistry, 57: 1382-1385.
85YAM	02	M. Yamamoto (1985) Rapid Dissolution of Plutonium in Soil by Fusion with Ammonium Hydrogen Sulfate followed by Plutonium Determination by Ion Exchange and Alpha Spectrometry, Journal of Radioanalytical and Nuclear Chemistry, 90: 401-408.
85YAN	01	J. Y. Yang, C. L. Tseng, J. M. Lo, and M. H. Yang (1985) Determination of Traces of Lithium in Biological, Environmental, and Metal Samples by Neutron Activation Analysis, Fresenius Zeitschrift fur Analytische Chemie, 321: 141-145.
85ZAC	01	D. Zachmann (1985) Geochemistry of Boron in Concentrations and Host Rock of Emsian Age in the Rheinische Schiefergebirge, Federal Republic of Germany, Chemical Geology, 48: 213-229.
85ZHA	01	Y. K. Zhang, S. Hanamura, and J. D. Winefordner (1985) Evaluation of Microwave-induced Air-plasma as an Excitation Source, Applied Spectroscopy, 39: 226-230.
86BOW	01	N. W. Bower, E. S. Gladney, and R. W. Ferenbaugh (1986) A Critical Comparison of the X-ray Fluorescence and Combustion-Infrared Methods for the Determination of Sulfur in Biological Matrices, Analyst, 111: 105-106.
86CAH	01	R. A. Cahill and A. D. Autrey (1986) Organic Carbon Measurements of Biological Materials from a Large River Ecosystem: A Major Improvement over Indirect Estimates of Carbon Flow, in preparation.
86CHI	01	F. Chisela, D. Gawlik, and P. Bratter (1986) Instrumental Determination of some Trace Elements in Biological Materials by Epithermal and Thermal Neutron Activation Analysis, Analyst, 111: 405-410.
86ELS	01	H. N. Elsheimer (1986) Application of an Ion Selective Electrode Method to the Determination of Chloride in 41 International Geochemical Reference Materials, Geostandards Newsletter, In Press.
86FIS	01	L. B. Fischer (1986) Microwave Dissolution of Geologic Material: Application to Isotope Dilution Analysis, Analytical Chemistry, 58: 261-263
86GAU	01	M. A. Gautier, E. S. Gladney, and B. O'Malley (1986) Quality Assurance for Health and Environmental Chemistry: 1985, Los Alamos National Laboratory report, LA-10813-MS.
86GIA	01	R. D. Giauque, J. M. Jaklevic, and A. C. Thompson (1986) Trace Element Determination using Synchrotron Radiation, Analytical Chemistry, 58: 940-944.
86GLA	01	E. S. Gladney, S. R. Garcia, and J. S. Newlin (1986) Determination of Elemental Composition of NBS SRM Coals via Automated Neutron Activation Analysis, Geostandards Newsletter, 10: 77-80.
86GRE	01	R. R. Greenberg (1986) Elemental Characterization of the National Bureau of Standards Milk Powder Standard Reference Material by Instrumental and Radiochemical Neutron Activation Analysis, Analytical Chemistry, in press.
86KAN	01	Y. Kanai, N. Imai, and S. Terashima (1986) Determination of Uranium in Thirty-six Geological Reference Samples by Fluorimetry and Extractive Spectrophotometry, Geostandards Newsletter, 10: 73.
86KRA	01	B. Kratochvil, M. Duke, and D. Ng (1986) Evaluation of Homogeneity of a Certified Reference Material by Instrumental Neutron Activation Analysis, Analytical Chemistry, 58: 102-108.
86KRA	02	B. Kratochvil, N. Motkosky, M. Duke, and D. Ng (1986) Comparison of Instrumental Neutron Activation Analysis and Graphite Furnace Atomic Absorption Spectroscopy for the Determination of Trace Aluminium Concentration and Homogeneity in the Biological Reference Material TORT-1, Analytical Chemistry, submitted.
86SCI	01	Sciex Corporation (1986) Analysis of NBS SRM 1577a: Bovine Liver, Sciex Application Note 13586A.
86SCI	02	Sciex Corporation (1986) ICP/MS Analysis of NBS SRM 1633a: Coal Fly Ash, Sciex Application Note 13086A.
86TSU	01	M. Tsukada, K. Yamashita, K. Endo, and H. Nakahara (1986) Use of an Activatable Tracer for the Determination of Lanthanoid Elements in Biological and Environmental Standard Reference Material by Neutron Activation Analysis, Analytical Chemistry, in press.

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11. ABSTRACT (A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here)

Concentration data on as many as 92 constituents in 166 NBS Standard Reference Materials have been collected from over 1500 journal articles and technical reports. These data are summarized in consensus (mean) values with uncertainties expressed as ± one standard deviation and compared with all available certification data from NBS. Data are presented on the analytical procedures employed and all raw data are given in the tables. This compilation is a successor to NBS Special Publication 260-88.

12. KEY WORDS (Six to twelve entries; alphabetical order; capitalize only proper names; and separate key words by semicolons)

analytical methods; biological; certified; clinical; compilation; consensus values; environmental; geological; informational values; literature values; mean values; Standard Reference Materials; SRM

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